ENSV Inspection Transmittal Summary Report Inspection Date: Preliminary SNC Findings: **Inspection Type:** Media: 11/18/2010 No CEI **RCRA Transmittal Date:** NOV / NOPV / NOPF: Inspector: No DEDRIEL NEWSOME **Facility Name:** Northrop Grumman Guidance and Electronics Co. MM Participationg Progams: **Activity Number: ID Number:** Address: MOD007152903 4811 West Kearney Street Springfield MO 65803 **Federal Facility:** Potential EJ: Federal Activity: No No SBREFA Provided: Security Handout Provided: MM Screening Completed: EMS ISO 14001: **Compliance Officer: BETH KOESTER** No Yes N/A N/A ACS Code: **Selection Criteria 2: Selection Criteria 1:** RCRA02 LQG (KS,MO,NE) **Inspection Findings:**

This facility has closed and is in the process of being investigated and remediated under the oversight of MDNR Superfund.

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504171
RCRA

Comments:

Target Quality:
Closed facility.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7 901 NORTH 5TH STREET KANSAS CITY, KANSAS 66101

DEC 2 0 2010

MEMORANDUM

SUBJECT:

RCRA Compliance Evaluation Inspection at

Northrop Grumman Guidance and Electronics Company, Inc., Springfield, MO

MOD007152903

FROM:

Dedriel Newsome, Environmental Engineer Day Land

THRU:

John Houlinan, Chief

ENSV/EFCB

TO:

Donald Toensing, Chief

AWMD/ RESP

At the request of Air & Waste Management Division (AWMD), I performed a Resource Conservation and Recovery Act (RCRA) compliance evaluation inspection (CEI) at the Northrop Grumman Guidance and Electronics Company, Inc. in Springfield, MO (Northrop-Springfield). Northrop-Springfield is located at 4811 W. Kearney St, Springfield, MO 65803. The mailing address is P.O. Box 1693, Mail Stop 1401, Baltimore, MD 21203. I conducted the inspection on 11/18/2010 under the authority of RCRA Section 3007(a), as amended. During the inspection, I collected the information and data necessary to determine compliance with the applicable regulatory and statutory requirements. This memo and attachments present the results of the inspection. I conducted the inspection as a Level B Multi-Media Inspection and the Multi-Media Screening Checklist is included as attachment 1. Based on the information obtained during the course of the inspection, I inspected the facility as a conditionally exempt small quantity generator (CESQG) of hazardous waste. According to the EPA RCRAInfo database, this facility was last inspected by the EPA on 12/6/2005. Five violations were observed for management of satellite accumulation containers, job descriptions and incomplete manifests during the 2005 CEI.

Inspection Procedures

On the afternoon of 11/15/2010, I conducted a drive-by evaluation of Northrop-Springfield. There were no buildings visible on-site. Therefore, on 11/16/2010, I contacted Mr. Saylor, the facility contact listed in the EPA RCRAInfo database. I informed him that I wanted to conduct a CEI at the Northrop-Springfield facility. Mr. Saylor stated that he was located in



Baltimore, MD and that they had no company personnel located in Springfield, MO. Mr. Saylor and I made arrangements for me to meet with their contractor, Stantec Consulting (Stantec), Springfield, IL, at the trailer office located on-site on 11/18/2010 at 9:30A.M.

On 11/18/2010, I arrived at the site approximately 9:30A.M. and met two Stantec employees. They were Mark Densmore, Sr. Geologist, and Greg Michael, Sr. Engineer. They acted as the Northrop-Springfield facility representatives while I was on-site. However, they did not sign any of the inspection forms. Therefore, I emailed them to Mr. Saylor on 11/22/2010 for his signature. Mr. Saylor returned them on 11/23/2010 along with additional analytical information (see attachments 2 and 3). I also discussed my inspection findings with Mr. Saylor on the telephone at this time. Mr. Saylor requested that all EPA correspondence be sent to him at the above mailing address.

Facility Description

Northrop-Springfield is no longer operating. In approximately 2007, they sold what they could and demolished the building. Currently, Stantec is conducting on-site investigative and remediation activities. The investigative and remediation activities are being overseen by the Missouri Department of Natural Resources (MDNR), Division of Geology and Land Survey, Superfund Section. The MDNR contact is Evan Kifer located in Jefferson City, MO. Mr. Kifer stated that Northrop-Springfield is currently operating under a 1993 consent decree with MDNR that is in the process of being updated and expected to be finalized by December 2010. The contaminants are primarily tetrachloroethylene (TCE), 1,1,1-trichloroethane (TCA) and other "daughter" constituents. The areas of concern are shown on the layout included as attachment 4. Remediation activities currently include soil and groundwater treatment.

Soil remediation consists of Electrical Resistance Heating (ERH). A full-scale ERH system pilot was conducted on the New Acid Pit (NAP) area and was completed in approximately 2009. Based on the pilot results, an ERH system is currently being installed on the Original Acid Pit (OAP) Treatment Area (see attachment 3 for layout). The ERH system is expected to be operational by approximately January 2011 and the treatment is expected to take about six months. In general, the ERH system heats the soil to remove the contaminants. This generates steam and vapors which are captured. The steam is condensed and the water is discharged to an on-site wastewater treatment system (WWTS). The vapors from the high contaminated areas are treated in a catalytic oxidizer. The vapors from the low contaminated areas are treated in an activated carbon unit. The high and low contaminated areas are predetermined based on previous analytical sampling results.

Until about June 2010, contaminated groundwater was being extracted and treated in the on-site WWTS. The WWTS consisted of pumping the groundwater into a surge tank, treating it in an air stripper, and discharging it to the city sewer under a pretreatment agreement with the city. Northrop-Springfield has about 14 groundwater recovery wells on-site. Since June 2010, Emulsified Vegetable Oil (EVO) is being used to treat the contaminated groundwater. This treatment process consists of injecting a vegetable oil/bacteria culture mix into the groundwater for degradation of contaminants.

The manifest for the last shipment of hazardous waste manifested off-site when Northrop-Springfield ceased operating in 2007 is included as attachment 5f. Since that time, the wastes generated on-site consisted of the following:

- **Spent Activated Carbon** was generated twice from the ERH pilot study. It was generated on 3/25/2009 and 9/29/2008. It was collected in containers and manifested offsite on 4/9/2009 and 12/10/2008, respectively. It was manifested as a F002/F003/F005 hazardous waste to Clean Harbors (see attachments 5d and 5e for manifests).
- Soil Cuttings, Sampling Cores and Sediment are occasionally generated on-site. When they are generated from a contaminated area that is not RCRA hazardous, then they are handled as non-hazardous waste. When they are generated from a contaminated area that is RCRA hazardous, then they are handled as hazardous waste. On 8/17/2009, 7 tons of hazardous soil cuttings were generated on-site. They were manifested off-site on 9/28/2009 to Clean Harbors as a F002/F003/F005 hazardous waste (see attachment 5a for manifest). On 3/25/2009, 4950 pounds of hazardous sampling cores from the NAP pilot ERH system were generated. They were manifested off-site on 4/9/2009 to Clean Harbors as a F002/F003/F005 hazardous waste (see attachment 5c for manifest). On 9/28/2009, 9 tons of non-hazardous soil cuttings were manifested off-site to Clean Harbors (see attachment 5b for manifest).

A signed LDR notice for the 7 tons of F002 soil cuttings manifested off-site on 9/29/2009 could not be located at the time of the inspection. Mr. Saylor stated that they maintain a copy of the manifests on-site and he also maintains an official file in Baltimore, MD. Mr. Saylor stated that he had a copy of the signed LDR notice that was sent with the manifest shipment. He emailed me the signed LDR notice on 11/19/2010 (see attachment 5a.i).

At the time of the inspection, I observed two drums labeled as non-hazardous waste on-site. They were a drum of sediment from water that was removed from the non-hazardous A/B Lagoon area and a drum of Geoprobe soil cuttings from the non-hazardous sanitary lagoon. I asked for the analytical results relating to these two waste streams. The data could not be located at the time of the inspection. Mr. Saylor emailed me this data on 11/23/2010 verifying that these wastes were non-hazardous. The data is included as attachment 3, pages 5 through 10.

• Air Stripper Residue is generated from the WWTS air stripper unit. It consists of hardened residue (lime stone) that clogs the holes in the stripper trays. The trays were cleaned twice (exactly when was unknown) since 2008. Mr. Michael stated that the hardened residue was physically removed and that no chemicals were used. He stated that about 5 to 10 gallons of residue were generated from each cleaning. The air stripper residue would appear to be a F002/F003/F005 hazardous waste sludge. The residue was returned to the OAP Treatment Area (see attachment 4 for layout). I discussed this disposal with Mr. Kifer and he stated that it was acceptable. He stated that they have let them consolidate some of the wastes on-site in the past. It should be noted that now the

OAP Treatment Area is capped by the ERH system. Therefore, any air stripper residue generated in the future will have to be handled differently.

- Surge Tank Residue builds up in the cone shaped bottom surge tank. Mr. Michael believed that the tank was cleaned once since 2008. He stated that he did not know the amount of residue that was generated, but would guess that it was less than 100 gallons. The surge tank residue would appear to be a F002/F003/F005 hazardous waste sludge. Mr. Michael stated that the tank residue was returned to the OAP Treatment Area (see attachment 4 for layout). I discussed this disposal with Mr. Kifer and he stated that it was acceptable the same as the air stripper residue above. Mr. Michael estimated that currently the surge tank contains about two feet of residue. It should be noted that now the OAP Treatment Area is capped by the ERH system. Therefore, any surge tank residue generated in the future will have to be handled differently.
- Personal Protective Equipment (PPE) is used on-site. Nitrile gloves are worn during sampling activities. Approximately one to two 2-lb boxes of spent gloves are generated a quarter. Any gloves contaminated with listed waste would also appear to be listed due to the contained-in policy. These gloves were determined to be non-hazardous by Northrop-Springfield based on knowledge and were disposed in the general trash. I discussed this determination with Mr. Kifer and he stated that Northrop-Grumman received approval for a contained-out determination (see attachment 6). According to the contained-out determination approval document, the contained-out determinations for listed hazardous wastes proposed therein was intended to apply to the soil and solid environmental media generated by current and future site activities within the NAP, OAP, and Building Footprint Subfloor area of concerns (see attachment 6, page 5).
- General Trash consists of paper, refuse, cardboard, etc. It is collected in an approximately 2-cubic yard dumpster. Allied Waste, Springfield, MO is contacted as needed to collect the waste which is about once a month.

Mr. Michael and Mr. Densmore stated that no waste is generated from the EVO treatment process. Also, there have been no universal waste lamps or batteries generated on-site since the facility closed.

Northrop-Springfield last notified on 5/4/2009 as a large quantity generator (LQG) of F002, F003 and F005 hazardous wastes according to the EPA RCRAInfo database (see attachment 7). I reviewed the RCRAInfo Handler Sheet for any incorrect data and none were noted as shown on attachment 7. Based on the latest manifests provided for review and known hazardous wastes generation dates, it appears that Northrop-Springfield last manifested hazardous waste off-site in September 2009 (see attachments 5a through 5e). They manifested 7 tons of F002 hazardous waste and would have been a LQG at that time. Since September 2009 it appears that they did not generate any hazardous waste other than a small amount of air stripper residue and the estimated 100 gallons of surge tank residue. However, exactly when the air stripper residue and surge tank residue were generated was unknown. Therefore, at the time of the inspection, I inspected Northrop-Grumman as a CESQG. However, they will probably be a SQG or LQG again at various times when the surge tank is cleaned, the ERH system is operating

and/or other remedial activities are conducted on-site. The Entry / Exit checklist completed during the inspection is included as attachment 8.

Attachments

1. Multi-Media Inspection Checklist (2 pages)

2. 11/22/2010 EPA Email Requesting Signature on the Confidentiality Notice and Document of Receipt (4 pages)

- 3. 11/23/2010 Northrop-Springfield Email Returning the Signed Confidentiality Notice and Document of Receipt Along with Additional Analytical Information (10 pages)
- 4. Facility Layout with Areas of Concern Noted (1 page)
- 5. Manifest Documents
 - a. 9/28/2009 Manifest and Unsigned LDR Notice –F002 soil cuttings (2 pages)
 i. Email with Signed LDR Notice for 9/28/09 Manifest (2 pages)
 - b. 9/28/2009 Manifest and LDR Notice -non-hazardous soil cuttings (1 page)
 - c. 4/9/2009 Manifest and LDR Notice F002/F003/F005 NAP pilot sampling cores (7 pages)
 - d. 4/9/2009 Manifest and LDR Notice F002/F003/F005 spent activated carbon-2nd batch when pilot was done (3 pages)
 - e. 12/10/2008 Manifest and LDR Notice F002/F003/F005 spent activated carbon-1st batch when pilot was operating (3 pages)
 - 12/13/2007 Manifest and LDR Notice last manifest shipment of various hazardous wastes when facility closed (10 pages)
- 6. 12/6/2010 Email of the Contained-Out Determination Approval Document (8 pages)
- 7. EPA RCRAInfo Handler Information Report (1 page)
- 8. Entry / Exit Checklist (2 pages)

| Facility Name: Northrop Gromman Guidance Electronic Street 4 1 1 W. Kear May St. Street 4 1 W. Kear May St. Main facility activity, major process chemical(s) & description: for marked degreeating (water-based II), abagenated-based II, non-halogenated-based III, combustion (boilet, furnaces, oxidizers) plain (strone II), other 1 word of the street of the facility located in an apparant low income area (e.g., with many abandoned and dispidated properties)? ENVIRONMENTAL JUSTICE (Note: Forward to EJI a concern is identified during your inspection) 1. Is the facility located in an apparant low income area (e.g., with many abandoned and dispidated properties)? EMERGENCY PLANNING & COMMUNITY RIGHT TO KNOW ACT (EPCRA) & TOXIC SUBSTANCE CONTROL ACT (ISCA) Closed 1. Did facility file a Trel II report with fire department, Local & State Emergency Planning Committee? Yes No Forward to EJI & Toxin (lead, mercury, or polycyclic aromatic compounds) at any time over the least Syears? No (stop) Yes Forward to EJI & Stored 2500 bis of ammonia 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Forward To: EJ EPCRA / RMP / TSCA CWA Wetlands UIC PWS CAA / CFC RCRA UST SPCC REGION VII MULTIMEDIA SCREENING CHECKLIST |
|--|---|
| water treatment □, refrigeration □, manufracturing , plats washington □, other □, | Facility Name: Northrup Grumman Guidance & Electronics Inspector Dedrie Nows Media: RCRA Street: 4811 W. Kearney St. City: Springfield State: MO Zip: 65803 SIC/NAICS Code 5 6291 Phone: 410-993-7080 Facility Contact: Adam E. Saylor Sic/NAICS Code 5 6291 Number of Employees: Closed facility Work Hours/Shifts Closed facility Facility Subject to OSHA regulations Yes \(No. |
| water treatment □, refrigeration □, manufracturing p, plats water treatment □, other □, othe | |
| 1. Is the facility located in an apparent low income area (e.g., with many administry countries, school, etc.)? No □ (stop) Yes □ Forward to EJ If yes, is facility less then 1000 feet from nearest routinely occupied property (house, school, etc.)? No □ (stop) Yes □ Forward to EJ EMERGENCY PLANNING & COMMUNITY RIGHT TO KNOW ACT (EPCRA) & TOXIC SUBSTANCE CONTROL ACT (TSCA) € 1. Did facility file a Tier II report with fire department, Local & State Emergency Planning Committee? Yes □ No □ Forward to EPCRA 1. Did facility manufacture, import, or process (formulate, blend, package) >25,000 lbs of a chemical or >100 lbs of a Persistent Bioaccumulative 2. Did facility manufacture, import, or process (formulate, blend, package) >25,000 lbs of a chemical or >100 lbs of a Persistent Bioaccumulative 3. Has the facility: If any box in question 3 is marked - Forward to EPCRA 3. Has the facility: If any box in question 3 is marked - Forward to EPCRA 4. Stored ≥500 lbs of ammonia □ ≥100 lbs of chilorine □, or ≥10,000 lbs of an industrial chemical □, at any time over the last 2 years? □ a. Stored ≥500 lbs of ammonia □ ≥100 lbs of chilorine □, or ≥10,000 lbs of an industrial chemical □, at any time over the last 2 years? □ b. Stored ≥10,000 lbs of pressurized filammable material (propane, methane, butane, pentane, etc.) at any time over the last 2 years? □ d. Generated ≥ one half pound of metal dusts, turnes, or metal turnings, over the last calendar year? □ d. Generated ≥ one half pound of metal dusts, turnes, or metal turnings, over the last calendar year? □ d. Generated ≥ one half pound of metal dusts, furnes, or metal turnings, over the last calendar year? □ d. Generated ≥ one half pound of metal dusts, furnes, or metal turnings, over the last calendar year? □ d. Generated ≥ one half pound of metal dusts, furnes, or metal turnings, over the last calendar year? □ d. Generated ≥ one half pound of metal dusts, furnes, or metal turnings, over the last calendar year? □ d. Generated ≥ one half pound of metal dusts, furn | water treatment □, refrigeration □, manufacturing □, parts washers beginning (chrome □, other). non-halogenated-based □), combustion (boiler, furnaces, oxidizers) □ plating (chrome □, other). |
| Did facility file a lief in report with life experimental control of a control of | 1. Is the facility located in an <u>apparent</u> low income area (e.g., with many abandoned and anaphabeth.)? No □ (stop) Yes □ Forward to EJ |
| d. Generated ≥ one half pound of metal dusts, fumes, or metal turnings, over the facility have any oil filled electrical equipment. No ⋈ (stop) Yes ☐ Forward to TSCA and ask Has facility tested oil filled equipment to determine PCB content; No ☐ Yes ☐ number containing PCBs greater than 50 ppm ☐ and percent of all equipment tested ☐ Is equipment leaking (including wet or weeping equipment)? No ☐ Yes ☐ — Get Photo CLEAN WATER ACT (CWA) - National Pollution Discharge Elimination System (NPDES), Industrial Pretreatment, Storm Water, & Wetlands 1. Does the facility discharge any wastewater to storm sewers, surface water, or the land? No ☐ (stop) Yes ☒ 1. If yes, are all wastewater discharges permitted? Yes ☒ No ☐ Forward to CWA 1. If yes, are the discharges permitted by: State? ☐ . City? ☒ ☐ If yes, Stop here. 1. If yes, are the discharges permitted by: State? ☐ . City? ☒ ☐ If yes, Stop here. 1. If yes, does the city have a state or EPA approved pretreatment program? Yes ☒ No ☐ Forward to CWA 1. If yes, does the city have a state or EPA approved pretreatment program? Yes ☒ No ☐ Forward to CWA 1. Stop Yes ☒ No ☐ Forward to CWA 2. During rainfall events, can storm water carry pollutants from manufacturing, processing, storage, disposal, shipping and receiving areas, or from construction sites >1 acre, to storm sewers or surface water? No ☐ (stop) Yes ☒ No ☐ Forward to CWA 1. If yes, does the facility have an NPDES permit for these storm water discharges? Yes ☒ No ☐ Forward to CWA 2. Did you see any wastewater discharges not identified by the facility? No ☒ (stop) Yes ☐ Identify location, time, appearance of discharge: 2. Ooes the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No ☒ (stop) Yes ☐ Identify location, time, appearance of the more than the scale of the provided of the more than the scale of the provided of the provided of t | Did facility file a Tier If report with file department, 2554 at 187 department, 2554 at |
| 1. Does the facility discharge any wastewater to storm sewers, surface water, or it to the lifyes, are all wastewater discharges permitted? Yes No Forward to CWA 2. Does the facility have process wastewaters that are discharged to a city POTW (Publicly Owned Treatment Works)? No (stop) Yes No Forward to CWA If yes, are the discharges permitted by: State? □, City? □ - If yes, Stop here. No Forward to CWA If yes, does the city have a state or EPA approved pretreatment program? Yes No or Don't Know □ Forward to CWA 3. During rainfall events, can storm water carry pollutants from manufacturing, processing, storage, disposal, shipping and receiving areas, or from construction sites >1 acre, to storm sewers or surface water? No □ (stop) Yes □ No □ Forward to CWA If yes, does the facility have an NPDES permit for these storm water discharges? Yes □ No □ Forward to CWA 2. Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No □ (stop) Yes □ - Identify location, time, appearance of discharge: 3. Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No □ (stop) Yes □ - Identify location, time, appearance of discharge: 4. Did you see any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No □ (stop) Yes □ - Identify location, time, appearance of discharge: 4. Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No □ (stop) Yes □ - Identify location, time, appearance of discharge: 4. Did you see any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No □ (stop) Yes □ - Identify location, time, appearance of discharges. 5. Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No □ (stop) Yes □ - Identify location, time, appearance of discharges. | d. Generated ≥ one half pound of metal dusts, fumes, or metal turnings, over the last calculated year. 4. Does the facility have any oil filled electrical equipment. No □ (stop) Yes □ Forward to TSCA and ask. Has facility tested oil filled equipment to determine PCB content; No □ Yes □ number containing PCBs greater than 50 ppm and percent of all equipment tested. Is equipment leaking (including wet or weeping equipment)? No □ Yes □ - Get Photo |
| 2. Does the facility have process wastewaters that are discharged to a city FOTW (1 date). If yes, are the discharges permitted by: State? □ , City? ☑ − If yes, Stop here. If yes, does the city have a state or EPA approved pretreatment program? Yes ☑ No or Don't Know □ Forward to CWA 3. During rainfall events, can storm water carry pollutants from manufacturing, processing, storage, disposal, shipping and receiving areas, or from construction sites >1 acre, to storm sewers or surface water? No □ (stop) Yes ☑ If yes, does the facility have an NPDES permit for these storm water discharges? Yes ☑ No □ Forward to CWA Did you see any wastewater discharges not identified by the facility? No ☑ (stop) Yes □ - Identify location, time, appearance of discharge: (Get Photo) Forward to CWA Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No ☑ (stop) Yes □ If yes, have any wetland areas been dredged, filled, channelized, dammed, or had gravel removed from them within the last 5 years? | CLEAN WATER ACT (CWA) - National Pollution Discharge Elimination System (NPDES), Industrial Pretreatment, Storm Water, & Wetlands 1. Does the facility discharge any wastewater to storm sewers, surface water, or the land? No □ (stop) Yes ▼ 1. Does the facility discharge any wastewater to storm sewers, surface water, or the land? No □ (stop) Yes ▼ |
| If yes, have any wetland areas been dredged, filled, channelized, dammed, or had gravel removed from them within the last 5 years? No Forward to CWA No Forward to CWA No Forward to CWA No Forward to CWA (Get Photo) Forward to CWA (Get Photo) Forward to CWA Solution Forward to CWA (Get Photo) Forward to CWA (Stop) Yes Solution Forward to CWA (Get Photo) Forward to CWA | 2. Does the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewaters</u> that are discharged to a city POTW (1 dailely 5 of the facility have <u>process wastewat</u> |
| 5. Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No (stop) Yes (st | construction sites >1 acre, to storm sewers or surface water? No 🗀 (stop) 1000 No 🗆 Forward to CWA |
| | 5. Does the facility have any wetland areas (e.g. streams, ponds, or temporarily wet areas)? No (stop) Yes (stop) Yes (stop) If yes have any wetland areas been dredged, filled, channelized, dammed, or had gravel removed from them within the last 5 years? |

<u>GRAY SHADED AREAS INDICATE ITEMS YOU NEED TO LOOK FOR DURING VISUAL INSPECTION</u>

Version 08,23.05a

| | SAFE DRINKING WATER ACT (SDWA) - Underground Injection Control (UIC) & Public Water System (PWS) 1. Does facility discharge any liquids to the subsurface (septic systems, disposal wells, cesspools, etc.)? No (stop) Yes (stop) Yes Forward to UIC If yes, do these liquid wastes consist of sanitary wastewater only? Yes No (private well, pond, etc.)? No (stop) Yes Forward to PWS If yes, does the facility test or monitor its drinking water in order to comply with state regulations? Yes No (PWS) |
|-----|--|
| (| CLEAN AIR ACT (CAA) and CFCs Clubed |
| | Do you see any dense, non-steam, smoke or dust emissions leaving the facility property? No ☑ Yes ☐ Forward to CAA |
| | Source(Get Photo) |
| ,2 | 2. Does the facility have any new air pollution emitting equipment that was constructed or installed in the past 5 years? No (stop) Yes I If yes, is equipment permitted? Yes I No I Forward to CAA Describe: |
| 3 | Does the facility have any cooling units that contain >50 lbs of refrigerant? No 💆 (stop) Yes 🗆 Forward to CFC |
| | If yes, are these units: Self-serviced? ☐ Contract Serviced? ☐ - Service Company: |
| 4 | . Does the facility have a refrigeration process that contains more than 10,000 lbs of ammonia? No 💢 (stop) Yes 🗆 Forward to EPCRA/RMP |
| 5 | . Does the facility service motor vehicle air conditioning systems? No 💢 (stop) Yes 🗆 Forward to CFC |
| | |
| | ESOURCE CONSERVATION AND RECOVERY ACT (RCRA) and UNDERGROUND STORAGE TANKS (UST) Does the facility generate more than 30-gallons (220 lbs./100kg) of hazardous waste per month or at any one time? No (stop) Yes |
| 1 | |
| | If yes, does facility have an EPA Hazardous Waste Identification Number? Yes (stop) No Forward to RCRA |
| 2 | . Is hazardous waste treated ☑, stored >90-days □, burned □, land filled □, put in surface impoundments □ or waste piles □? |
| 2 | No □ (stop) Yes □ If yes, is the facility permitted for above described activity? Yes □ No □ Forward to RCRA |
| | Did you see or does the facility have any large quantities of materials that the facility claims to be non-hazardous waste material (>10 drums, roll-offs, waste piles, etc. – exclude clean office trash, cardboard, & packaging type wastes)? No 🗆 (stop) Yes 🗆 |
| | Material Claimed To Be Non-Hazardous How does the facility know these wastes are non-hazardous? |
| | Testing, industry or manuf. info, MSDS, etc. : None available : Forward to RCRA |
| | Testing, industry or manuf. info, MSDS, etc |
| | Testing, industry or manuf. info, MSDS, etc. : None available : Forward to RCRA |
| | Testing, industry or manuf. info, MSDS, etc. : None available : Forward to RCRA |
| | Testing, industry or manuf. info, MSDS, etc. : None available : Forward to RCRA |
| 4. | Did you see any leaking hazardous waste containers, drums, or tanks? No Yes G Forward to RCRA |
| | Describe: |
| 5. | Did you see any signs of spills or releases (e.g., dead or stressed vegetation, stains, discoloration)? No \(\subseteq \text{ Yes} \subseteq \text{ Forward to RCRA} \) |
| | Describe: facility soil + groundwater being remediated (Get Photo) |
| 6. | Did you see any chemical or waste handling practices that concern you (access to children/public)? No Yes U Forward to RCR4 & |
| | EPCRA Describe:(Get Photo) |
| 7. | Does the facility have any past or present underground petroleum product or hazardous material tanks? No Yes Very Forward to UST |
| 8. | Does the facility have any underground fuel tanks for emergency generators? No Yes D Forward to UST |
| | |
| | PILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC) |
| I. | Does the facility have any aboveground oil tanks (petroleum, synthetic, animal, fish, vegetable), with an aggregate volume >1,320 gallons? No ☑ (stop) Yes ☐ - Does the facility have a certified SPCC Plan? Yes ☐ No ☐ Forward to SPCC |
| | If yes, are there secondary containment systems for the tanks? Yes \(\sigma \) No \(\sigma \) Forward to SPCC |
| | If yes, are any tanks <u>leaking</u> where oil could reach waters of the State or U.S.? No \(\text{No } \text{Yes} \(\(\text{Get Photo} \) Forward to SPCC |
| , | |
| EN | VIRONMENTAL MANAGEMENT SYSTEMS (EMS) closed facility going thru remediation of MDNR |
| 1. | Does your facility have an EMS? No ☐ Yes ☐ |
| 2. | Is the facility's EMS ISO 14001 certified? No □ Yes □ |
| * P | LEASE TAKE <u>PHOTOS</u> TO DOCUMENT POTENTIAL PROBLEMS |
| | reion 08 23 05a GRAY SHADED AREAS INDICATE ITEMS VOLUMEED TO LOOK FOR DURING VISUAL INSPECTION |



Northrop Grumman - Springfield, MO Inspection Forms

Dedriel Newsome to: Saylor, Adam E.

11/22/2010 02:47 PM

Hi Adam,

Attached are the inspection forms to be signed. Please give me a call to discuss when you receive them.





Doc of Recpt.pdf Conf Notice.pdf

Thanks, **Dedriel Newsome** US E. P. A., Region 7 901 North 5th Street Kansas City, KS 66101 (913)551-7049 (913)551-9049 (fax)

"Saylor, Adam E."

Ms. Newsome, Please find the attached LDR form for Uniform Hazardous Wast...

11/19/2010 12:01:54 PM

From:

"Saylor, Adam E." <Adam.Saylor@ngc.com>

To:

Dedriel Newsome/R7/USEPA/US@EPA

Date:

11/19/2010 12:01 PM

Subject:

Northrop Grumman - Springfield, MO

Ms. Newsome,

Please find the attached LDR form for Uniform Hazardous Waste Manifest 002991964FLE that you requested. I look forward to speaking with you on Monday.

Regards,

Adam

<<002991964FLE Signed LDR.TIF>>

Adam Saylor, CHMM

Sr. Environmental Engineer

Northrop Grumman Electronic Systems

Phone: (410) 993-7080

Fax: (410) 981-1946

Cellular: (410) 570-1030

adam.saylor@ngc.com[attachment "002991964FLE Signed LDR.TIF" deleted by Dedriel Newsome/R7/USEPA/US]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY CONFIDENTIALITY NOTICE

| Facility Name |
|---|
| Northrop Grymman |
| Facility Address |
| Springfield, MO |
| Inspector (print) |
| Dedriel Newsome |
| U.S. EPA, Region VII, 901 N. 5th St., Kansas City, KS 66101 |
| 1 11/16/10 |
| The United States Environmental Protection Agency (EPA) is obligated, under the Freedom of Information Act, to release information collected during inspections to persons who submit requests for that information. The Freedom of Information Act does, however, have provisions that allow EPA to withhold certain confidential business information from public disclosure. To claim protection for information gathered during this inspection you must request that the information be held CONFIDENTIAL and substantiate your claim in writing by demonstrating that the information meets the requirements in 40 CFR 2, Subpart B. The following criteria in Subpart B must be met: |
| Your company has taken measures to protect the confidentiality of the information, and it intends to continue to take such measures. |
| 2. No statute specifically requires disclosure of the information. |
| 3. Disclosure of the information would cause substantial harm to your company's competitive position. |
| Information that you claim confidential will be held as such pending a determination of applicability by EPA. |
| |
| I have received this Notice and <u>DO NOT</u> want to make a claim of confidentiality at this time. |
| Facility Representative Provided Notice (print) Signature/Date |
| |
| |
| I have received this Notice and <u>DO</u> want to make a claim of confidentiality. |
| Facility Representative Provided Notice (print) Signature/Date |
| |
| |
| Information for which confidential treatment is requested; |
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(Rev:1/19/00)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY CONFIDENTIALITY NOTICE

| Facility Name |
|---|
| Northrop Grymman |
| Facility Address |
| Springfield, MO |
| Inspector (print) |
| Dedriel Newsome |
| U.S. EPA, Region VII, 901 N. 5th St., Kansas City, KS 66101 Date |
| Date 1/18/10 |
| |
| The United States Environmental Protection Agency (EPA) is obligated, under the Freedom of Information Act, |
| to release information collected during inspections to persons who submit requests for that information. The Freedom |
| of Information Act does, however, have provisions that allow EPA to withhold certain confidential business information from public disclosure. To claim protection for information gathered during this inspection you must |
| request that the information be held CONFIDENTIAL and substantiate your claim in writing by demonstrating that |
| the information meets the requirements in 40 CFR 2, Subpart B. The following criteria in Subpart B must be met: |
| 1 |
| 1. Your company has taken measures to protect the confidentiality of the information, and it intends to continue to take such measures. |
| |
| 2. No statute specifically requires disclosure of the information. |
| 3. Disclosure of the information would cause substantial harm to your company's competitive position. |
| Information that you claim confidential will be held as such pending a determination of applicability by EPA. |
| mioritation that you claim confidential will be field as such perfamily a determination of appreciously by 2.11. |
| |
| I have received this Notice and DO NOT want to make a claim of confidentiality at this time. |
| |
| Facility Representative Provided Notice (print) Signature/Date |
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| I have received this Notice and DO want to make a claim of confidentiality. |
| |
| Facility Representative Provided Notice (print) Signature/Date |
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| Information for which confidential treatment is requested; |
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(Rev:1/19/00)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY RECEIPT FOR DOCUMENTS AND SAMPLES

| Northrup Govmman Facility Address Springfield, MO |
|---|
| Documents Collected? YES (list below) NO |
| Samples Collected? YES (list below) NO Split Samples: YES NO |
| Documents/Samples were: 1)Received no charge 2)Borrowed 3)Purchased |
| Amount Paid: \$ Method: Cash Voucher To Be Billed |
| The documents and samples described below were collected in connection with the administration and enforcement of the applicable statute under which the information is obtained. |
| |
| Receipt for the document(s) and/or sample(s) described below is hereby acknowledged: |
| Manifest Documents (alepsa) Facility Layout (Ipgs) |
| racitly by by |
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| |
| Facility Representative (print) Signature/Date |
| |
| Inspector (print) Dedriel Newsome Weshiel Newsome 11/18/10 |
| U.S. EPA, Region VII, 901 N. 5th Street, Kansas City, KS 66101 |

(rev:1/20/93)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY RECEIPT FOR DOCUMENTS AND SAMPLES

| Northrup Govmman |
|---|
| Facility Address Springfield, MO |
| |
| Documents Collected? YES / (list below) NO |
| Samples Collected? YES (list below) NO Split Samples: YES NO |
| Documents/Samples were: 1)Received no charge 2)Borrowed 3)Purchased |
| Amount Paid: \$ Method: Cash_ Voucher_ To Be Billed |
| The documents and samples described below were collected in connection with the administration and enforcement of the applicable statute under which the information is obtained. |
| |
| Receipt for the document(s) and/or sample(s) described below is hereby acknowledged: |
| Mani-fest Documents (26 pgs) |
| Facility Layout (1pg) |
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| |
| Facility Representative (print) Signature/Date |
| Inspector (print) Dedriel Neusome Werlief Newsome 11/18/10 |
| U.S. EPA, Region VII, 901 N. 5th Street, Kansas City, KS 66101 |

(rev:1/20/93)



RE: EXTERNAL:Northrop Grumman - Springfield, MO Inspection Forms Saylor, Adam E. to: Dedriel Newsome

11/23/2010 11:49 AM Show Details

4 Attachments

Soil Core Analytical.pdf Consolidation Sediment Analytical.pdf Receipt of Documents.pdf Confidentiality Notice.pdf

Dedriel,

Please find the attached analytical you requested for the consolidation sediment drum and the Sanitary Lagoon soil cores drum. As discussed onsite with Stantec Consulting, generator knowledge was utilized as the basis for the non-hazardous waste classification for both drums. Sampling data has been collected from various sampling points during site investigations in both the consolidation and Sanitary Lagoon areas. A review of the cumulative data gathered over time during these sampling events provided Northrop Grumman the ability to make the non-hazardous waste determinations via generator knowledge. Confirmation sampling of the drummed waste has subsequently been completed and the attached analytical verifies that the non-hazardous waste classification based on generator knowledge is correct.

Also included are signed copies of the Confidentiality Notice and Receipt for Documents that you requested.

Please contact me if you need any further information or I can answer any questions.

Thank You

Adam

Adam Saylor, CHMM Sr. Environmental Engineer Northrop Grumman Electronic Systems Phone: (410) 993-7080 Fax: (410) 981-1946 Cellular: (410) 570-1030 adam.saylor@ngc.com

----Original Message----

From: Newsome.Dedriel@epamail.epa.gov [mailto:Newsome.Dedriel@epamail.epa.gov]

Sent: Monday, November 22, 2010 3:47 PM

To: Saylor, Adam E.

Subject: EXTERNAL:Northrop Grumman - Springfield, MO Inspection Forms

Attached are the inspection forms to be signed. Please give me a call to discuss when you receive Hi Adam,

(See attached file: Doc of Recpt.pdf)(See attached file: Conf Notice.pdf)

Thanks, Dedriel Newsome US E. P. A., Region 7 901 North 5th Street Kansas City, KS 66101 (913)551-7049 (913)551-9049 (fax)

From:

"Saylor, Adam E."

ATTACHMENT 3 Page 1 of 10

<Adam.Saylor@ngc.com>

To:

Dedriel Newsome/R7/USEPA/US@EPA

Date:

11/19/2010 12:01

PM

Subject:

Northrop Grumman - Springfield,

Ms. Newsome,

Please find the attached LDR form for Uniform Hazardous Waste Manifest 002991964FLE that you requested. I look forward to speaking with you on Monday.

Regards,

Adam

<<002991964FLE Signed LDR.TIF>>

Adam Saylor, CHMM

Sr. Environmental Engineer

Northrop Grumman Electronic Systems

Phone: (410) 993-7080

Fax: (410) 981-1946

Cellular: (410) 570-1030

adam.saylor@ngc.com[attachment "002991964FLE Signed LDR.TIF" deleted by Dedriel Newsome/R7/USEPA/US]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY CONFIDENTIALITY NOTICE

| Facility Name |
|--|
| Northrop Grymman Guidance and Electronics Company Inc. Facility Address |
| |
| Springfield, MO |
| Inspector (print) |
| Dedrie Newsome |
| U.S. EPA, Region VII, 901 N. 5th St., Kansas City, KS 66101 Date VI 8 |
| The United States Environmental Protection Agency (EPA) is obligated, under the Freedom of Information Act, to release information collected during inspections to persons who submit requests for that information. The Freedom of Information Act does, however, have provisions that allow EPA to withhold certain confidential business information from public disclosure. To claim protection for information gathered during this inspection you must request that the information be held CONFIDENTIAL and <u>substantiate</u> your claim in writing by demonstrating that the information meets the requirements in 40 CFR 2, Subpart B. The following criteria in Subpart B must be met: |
| Your company has taken measures to protect the confidentiality of the information, and it intends to continue to take such measures. |
| 2. No statute specifically requires disclosure of the information. |
| 3. Disclosure of the information would cause substantial harm to your company's competitive position. |
| Information that you claim confidential will be held as such pending a determination of applicability by EPA. |
| I have received this Notice and <u>DO NOT</u> want to make a claim of confidentiality at this time. |
| Facility Representative Provided Notice (print) Signature/Date |
| Adam Saylor al se 11/23/10 |
| |
| I have received this Notice and <u>DO</u> want to make a claim of confidentiality. |
| Facility Representative Provided Notice (print) Signature/Date |
| |
| Information for which confidential treatment is requested; |
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| (Rev:1/19/00) |

ATTACHMENT 3 Page 3 of 10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY RECEIPT FOR DOCUMENTS AND SAMPLES

| North rup Governman Guidance and Electionics Company Inc. Facility Address Spring field, MO Documents Collected? YES V (list below) NO |
|---|
| Samples Collected? YES (list below) NO Split Samples: YES NO |
| Documents/Samples were: 1)Received no charge 2)Borrowed 3)Purchased |
| |
| Amount Paid: \$ Method: Cash Voucher To Be Billed |
| The documents and samples described below were collected in connection with the administration and enforcement of the applicable statute under which the information is obtained. |
| 我来说我就说话话,我们也没有我们的说话,我们也没有我们的,我们也没有我们的,我们也没有我们的,我们也没有我们的,我们也没有我们的,我们也会会会会会会会会会会会会 ************************* |
| Receipt for the document(s) and/or sample(s) described below is hereby acknowledged: |
| Manifest Documents (depa) |
| Manifest Documents (26 pgs) Facility Layout (1pgs) |
| Acalytical for Waite Determination (4 pages) |
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| Facility Representative (print) Signature/Date |
| Adam Saylor and a 11/23/10 Inspector (print) Signature/Date |
| Dedriel Newsome Dedriel Newsome 11/18/10 |
| U.S. EPA, Region VII, 901 N. 5th Street, Kansas City, KS 66101 |
| (rev: 1/20/93) |

TEKLAB, INC.

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

LABORATORY RESULTS

Client: Stantec

Client Project: Northrop Grumman Springfield MO

WorkOrder: 10110874

Client Sample ID: Sanitary Lagoon Soil Cores
Collection Date: 11/18/2010 1:25:00 PM

Lab ID: 10110874-002 **Report Date:** 19-Nov-10

Matrix: SOLID

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed Ana | lyst |
|--------------------------------|-----------------|----------|-----------|------------|-----------|-----------|-----------------------|------|
| SW-846 1311, 3010A, 6010B, MET | ALS IN TCLP EXT | RACT B | Y ICP | | | | | |
| Arsenic | NELAP | 0.250 | | < 0.250 | mg/L | . 1 | 11/19/2010 3:10:23 PM | JMW |
| Barium | NELAP | 0.0500 | | 0.527 | mg/L | 1 | 11/19/2010 3:10:23 PM | JMW |
| Cadmium | NELAP | 0.0200 | | < 0.0200 | mg/L | 1 | 11/19/2010 3:10:23 PM | JMW |
| Chromium | NELAP | 0.100 | | < 0.100 | mg/L | 1 | 11/19/2010 3:10:23 PM | JMW |
| Lead | NELAP | 0.400 | | < 0.400 | mg/L | 1 | 11/19/2010 3:10:23 PM | JMW |
| Selenium | NELAP | 0.500 | | < 0.500 | mg/L | 1 | 11/19/2010 3:10:23 PM | JMW |
| Silver | NELAP | 0.100 | | < 0.100 | mg/L | 1 | 11/19/2010 3:10:23 PM | JMW |
| SW-846 1311, 5030, 8260B, VOLA | TILE ORGANIC C | OMPOU | NDS IN TO | CLP EXTRAC | T BY GC/N | <u>IS</u> | | |
| 1,1-Dichloroethene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| 1,2-Dichloroethane | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| 1,4-Dichlorobenzene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| 2-Butanone | NELAP | 5.00 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Benzene | NELAP | 0.200 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Carbon tetrachloride | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Chlorobenzene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Chloroform | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Tetrachloroethene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Trichloroethene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Vinyl chloride | NELAP | 0.200 | | ND | mg/L | 100 | 11/19/2010 3:10:00 PM | CCF |
| Surr: 1,2-Dichloroethane-d4 | 7 | 74.7-129 | | 96.1 | %REC | 100 | 11/19/2010 3:10:00 PM | CCF |
| Surr: 4-Bromofluorobenzene | | 86-119 | | 104.4 | %REC | 100 | 11/19/2010 3:10:00 PM | CCF |
| Surr: Dibromofluoromethane | 8 | 31.7-123 | | 106.2 | %REC | 100 | 11/19/2010 3:10:00 PM | CCF |
| Surr: Toluene-d8 | 8 | 34.3-114 | | 94.4 | %REC | 100 | 11/19/2010 3:10:00 PM | CCF |
| SW-846 1311, 7470A IN TCLP EX | XTRACT | | | | | | | |
| Mercury | NELAP | 0.00020 | | < 0.00020 | mg/L | 1 | 11/19/2010 | MEK |

Sample Narrative

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY TEL: 618-344-1004 FAX: 618-344-1005 **RECEIVING CHECK LIST** Client: Stantec Project: Northrop Grumman Springfield MO Lab Order: 10110874 Report Date: 19-Nov-10 Carrier: Greg Michael Received By: TWM Elizabeth a Hurley Completed by: Reviewed by: On: On: 18-Nov-10 19-Nov-10 Timothy W. Mathis Elizabeth A. Hurley Pages to follow: Extra pages included 0 Chain of custody Shipping container/cooler in good condition? Yes No _ Not Present Temp °C 1.2 Type of thermal preservation? Ice 🗸 None Blue Ice Dry Ice Chain of custody present? Yes No Chain of custody signed when relinquished and received? ~ Yes No Chain of custody agrees with sample labels? **V** No 🗔 Samples in proper container/bottle? **V** Yes No 🗔 Sample containers intact? No 🗌 Yes Sufficient sample volume for indicated test? No 🗆 All samples received within holding time? No Yes NA 🗸 Reported field parameters measured: Field Lab Container/Temp Blank temperature in compliance? When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected. Water - vials have zero headspace? No VOA vials Water - TOX containers have zero headspace? Yes No 🗌 No TOX containers Water - pH acceptable upon receipt? Yes 🗸 No 🗌 Any No responses must be detailed below or on the COC.

ATTACHMENT 3 Page 7 of 10

CHAIN OF CUSTODY

pg. _ \ of _ \ Work Order # 10110874

| TEKLAB, INC. 54 | 45 Horseshoe La | ake Road ~ Coll | linsville, | , IL 62234 ~ F | Phone: (618) 344-1004 ~ | Fax: (618) 344-1005 |
|--|---------------------|--|------------|--|--------------------------|--|
| | | | Sa | mples on: 🌠 l | ce 🗆 Blue Ice 🗀 No Ice | <u>1.Z</u> ·c |
| Address: 3223 S. M. | ADONBROOK RE | 0 | Pre | eserved in: 🗆 | Lab □ Field <u>FOR I</u> | AB USE ONLY |
| City / State / Zip: SPM NUFULO | 14 62711 | | La | b Notes: | | 2 1 1 |
| Contact: GAEG MICHAEL | Phone: 217/ | 698-7247 XII | 2 * | SRURA D | er Greg Michael | 994 11 19 10 |
| E-Mail: greg, michael@ stantec | Fax: | | Ce | omments: | O | |
| Are these samples known to be involved in lit Are these samples known to be hazardous? Are there any required reporting limits to be no limits in comment section. | IIYAS DENO | | (00000000 | 1 [|)AY | |
| Project Name / Number | Sample Co | llector's Name | | MATRIX | INDICATE ANA | LYSIS REQUESTED |
| NURTHOP GLUMMIN SPLINGFRED MO | GREG MICH | 1 | | Vater | * | |
| Results Requested Standard A1-2 Day (100% Surcharge) | illing Instructions | | | y pr | 1)14 | |
| ☐ Other ☐ 3 Day (50% Surcharge) | Date/Time Sampled | UNPRES HNO3 NaOH H2SO4 HCL | NaHSO4 | Water Drinking Water Soil Sludge Sp. Waste | 27 72 | |
| Lab Use Only Sample Identification | | | ZO | | | |
| 101100 For Consocilation | 11/18/10 1340 | 2 | | X | | |
| 10110874 CONSOLIPATION SOUMENT SANITORY LAGOON SOLIPATION SOLIPATION SOLIPATION SOLIPATION | 11/18/10 1325 | 8 | | X | * 1 | |
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| GREG MICHAEL Hingelle | le 11/18/ | 10 // | 16 | Contil | you / los | 11.18:10 1815 |
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The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

TEKLAB, INC.

ENVIRONMENTAL TESTING LABORATORY

TEL: 618-344-1004

FAX: 618-344-1005

LABORATORY RESULTS

Client: Stantec

Client Project: Northrop Grumman Springfield MO

WorkOrder: 10110874

Report Date: 19-Nov-10

Client Sample ID: Consolidation Sediment

Lab ID: 10110874-001

Collection Date: 11/18/2010 1:40:00 PM

Matrix: SOLID

| Analyses | Certification | RL | Qual | Result | Units | DF | Date Analyzed Ana | alyst |
|---------------------------------|-----------------|----------|-----------|------------|----------|-----|-----------------------|-------|
| SW-846 1311, 3010A, 6010B, META | ALS IN TCLP EXT | RACT B | Y ICP | | | | | |
| Arsenic | NELAP | 0.250 | | < 0.250 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| Barium | NELAP | 0.0500 | | 1.02 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| Cadmium | NELAP | 0.0200 | | < 0.0200 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| Chromium | NELAP | 0.100 | | 0.123 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| Lead | NELAP | 0.400 | | < 0.400 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| Selenium | NELAP | 0.500 | | < 0.500 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| Silver | NELAP | 0.100 | | < 0.100 | mg/L | 1 | 11/19/2010 3:48:17 PM | JMW |
| SW-846 1311, 5030, 8260B, VOLAT | TILE ORGANIC C | OMPOU! | NDS IN TO | CLP EXTRAC | ΓBY GC/N | MS | | |
| 1,1-Dichloroethene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| 1,2-Dichloroethane | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| 1,4-Dichlorobenzene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| 2-Butanone | NELAP | 5.00 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Benzene | NELAP | 0.200 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Carbon tetrachloride | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Chlorobenzene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Chloroform | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Tetrachloroethene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Trichloroethene | NELAP | 0.500 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Vinyl chloride | NELAP | 0.200 | | ND | mg/L | 100 | 11/19/2010 2:12:00 PM | CCF |
| Surr: 1,2-Dichloroethane-d4 | 1 | 74.7-129 | | 95.4 | %REC | 100 | 11/19/2010 2:12:00 PM | CCF |
| Surr: 4-Bromofluorobenzene | | 86-119 | | 102.5 | %REC | 100 | 11/19/2010 2:12:00 PM | CCF |
| Surr: Dibromofluoromethane | 8 | 31.7-123 | | 105.7 | %REC | 100 | 11/19/2010 2:12:00 PM | CCF |
| Surr: Toluene-d8 | 1 | 84.3-114 | | 96.1 | %REC | 100 | 11/19/2010 2:12:00 PM | CCF |
| SW-846 1311, 7470A IN TCLP EX | TRACT | | | | | | | |
| Mercury | | 0.00020 | | < 0.00020 | mg/L | 1 | 11/19/2010 | MEK |

Sample Narrative

TEKLAB, INC.

5445 HORSESHOE LAKE ROAD COLLINSVILLE, ILLINOIS 62234

ENVIRONMENTAL TESTING LABORATORY TEL: 618-344-1004 FAX: 618-344-1005 RECEIVING CHECK LIST Client: Stantec Project: Northrop Grumman Springfield MO Lab Order: 10110874 Report Date: 19-Nov-10 Carrier: Greg Michael Received By: TWM Elizabeth a Hurley Reviewed by: Completed by: On: On: 18-Nov-10 19-Nov-10 Timothy W. Mathis Elizabeth A. Hurley Pages to follow: Chain of custody Extra pages included 0 Yes 🗸 Shipping container/cooler in good condition? No 🗌 Not Present Temp °C 1.2 Ice 🗸 Type of thermal preservation? None Blue Ice **V** Chain of custody present? Yes No Chain of custody signed when relinquished and received? Yes **V** No Chain of custody agrees with sample labels? Yes No No 🗌 Samples in proper container/bottle? Yes No 🗌 Sample containers intact? Sufficient sample volume for indicated test? Yes No All samples received within holding time? No 🗌 Reported field parameters measured: Field Lab NA 🗸 Container/Temp Blank temperature in compliance? Yes 🗸 No When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected. Water - vials have zero headspace? Yes No No VOA vials Water - TOX containers have zero headspace? No 🗌 No TOX containers Yes Yes 🗸 Water - pH acceptable upon receipt? No 🗌 Any No responses must be detailed below or on the COC.

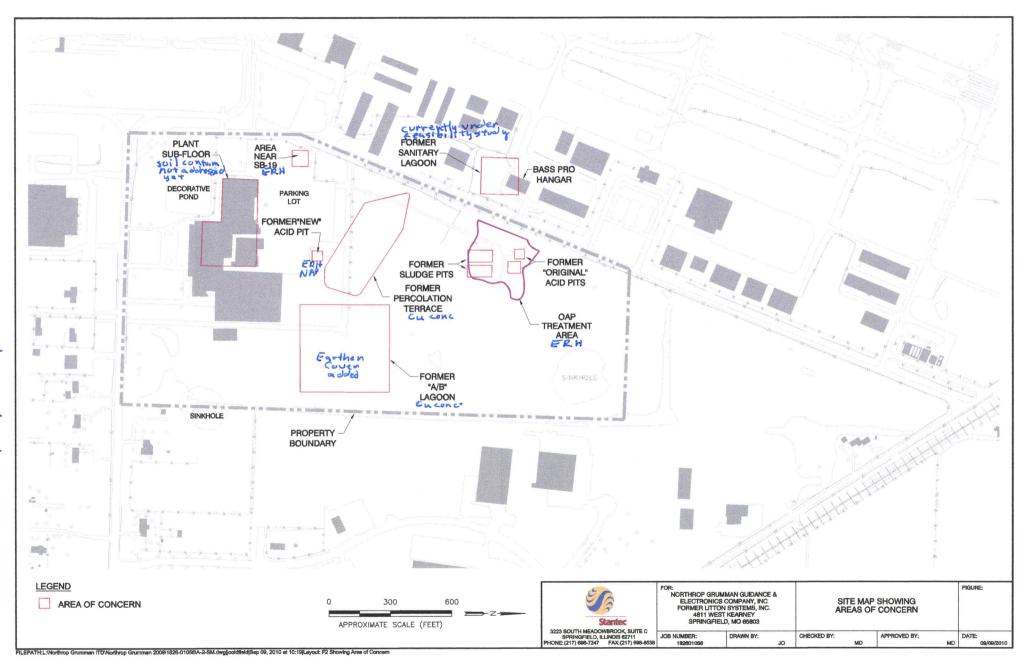
ATTACHMENT 3 Page 10 of 10

CHAIN OF CUSTODY

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TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

| Client: STANTEL Consulting | | | | | | Samples on: police □ Blue ice □ No ice <u>/-/-</u> °C | | | | | | | | | | | | | | | | | | |
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| Contact: GREG MICHARL | Phone: 217/ | 698 | -7 | 247 | KI | 12 | | * | 812 | CK | 14 | ٥ | ex_ | 04 | n M | cha | u. | 9 | 94 | ш¥ | 1 10 | | | |
| E-Mail: greg. michael@ stantec | ion Fax: | | | | | | | Соп | ıme | nts | | | | | 0 | | | | | | | | | |
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| Are these samples known to be involved in litiAre these samples known to be hazardous? | igation? If yes, a surcha □ Yes M No | rge wil | app | oly. □ | Yes | 12 | No | | | | | | | | V | | | | | | | | | |
| Are there any required reporting limits to be n | net on the requested and | lysis? | If ye | s, pl | ease | pro | vide | | è | | | Maes | | | | | | | | | | | | |
| limits in comment section. ☐ Yes | Sample Co | lecto | r'e | Nam | 10 | - | 8 | | MA | TRI | X | | | | INDIC | ATE | ANA | LYS | IS RE | QUE | STE | D | | |
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| ☐ Other ☐ 3 Day (50% Surcharge) | | W . | , E | 0 | | 되 | <u>8</u> 0 | Water | Drinking Water | _ | Sludge | Wa | 400 | A P | | | | | | | | | | |
| Lab Use Only Sample Identification | Date/Time Sampled | UNPRES | Nan | H2S | 모 | Me | NaHSO4 Other | × | D | Soil | SIL | Sp. | 7 | 5 | | | | | | | | | | |
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Signature

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

EPA Form 8700-22 (Rev. 3-05) Prévious editions are obsolete.

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ATTACHMENT __ Page __



Land Disposal Restriction Notification Form

Page: 1 of 1

Printed Date: Sep 23, 2009 MANIFEST INFORMATION Manifest Tracking Info. Generator: Northrop Grumman Guidance and Electronics C 002991964FLE 4811 W Kearney Address: Springfield, MO 65803 Sales Order No: DK2512726 EPA ID #: MOD007152903 LINE ITEM INFORMATION LDR Disposal Category Treatability Group: Line Item: Page No: Profile No: NON-WASTEWATER 4 (Meets LDR Standards) CH392720B **EPA Waste SubCategory EPA Waste Code** F002 NONE Applies to Certification Manifest Line **Items** I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies ith the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment. Waste analysis data, where available, is attached. Signature: **Print Name** Title: Date:



Northrop Grumman - Springfield, MO Saylor, Adam E. to: Dedriel Newsome 11/19/2010 12:01 PM Show Details

History: This message has been replied to.

1 Attachment



002991964FLE Signed LDR.TIF

Ms. Newsome,

Please find the attached LDR form for Uniform Hazardous Waste Manifest 002991964FLE that you requested. I look forward to speaking with you on Monday.

Regards,

Adam

<<002991964FLE Signed LDR.TIF>>

Adam Saylor, CHMM

Sr. Environmental Engineer

Northrop Grumman Electronic Systems

Phone: (410) 993-7080

Fax: (410) 981-1946

Cellular: (410) 570-1030

adam.saylor@ngc.com



Land Disposal Restriction Notification Form

Page: 1 of 1

Printed Date :Sep 23, 2009

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| Waste a | analysis da | ata, where availa | able, is attached. | | | | |
| Signat | ture : | 2334 | 181/3 | Print Nan | ne | Josiah H. Ball | |
| Title: | | Geologi | able is attached. | Date : | ٠ | 9-28-69 | |

EPA Form 8700-22 (Rev. 3-05) Preyious editions are obsciete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping. ATTACHMENT 5 Page 1

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

20. Designated Facility Owner or Operator: Certification of receipt of pazardous materials covered by the manifest except as motern 18a

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DK2285049 Please print or type. (Form designed for use on elife (12-pitch) typewriter.) 5C MA PPW 2/26/2009 Form Approved, OMB No. 2050-0039 1. Generator ID Number UNIFORM HAZARDOUS 2. Page 1 of 3. Emergency Response Phone 4. Manifest Tracking Number WASTE MANIFEST 48001 483 374 R 0011912 Generator's Name and Mailing Address Northrop Grunnman Guidance and Electronics Company VALL US KEARNOW 1811 W Kearney Springflald, MO 68800 Generator's Phone: 41792999311 6. Transporter 1 Company Name ATTICKaren Kolan Clean Narbors Environmental Services Inc. MAD039322250 7. Transporter 2 Company Name U.S. EPA ID Number Cloun Horbors Environmental MAD039322250 U.S. EFA ID Number Clean Harbors Grassy Mountain LLC 3 Miles Fast 7 Miles worth of Knolls Grantsville, UT 84079 UTD391301748 4359546900 Feditivis Phone: \$5, U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, 10. Containers 11. Total 12. Unit and Packing Group (if any;) 13. Waste Coccs HE Ma. Quantity MAN'S Type NA3077, HAZARDOUS WASTE, SOLID, N.O.S., F002 F003 F005 ERATOR STOLUENE, TRICHLOROETHYLENEY, S. PG III 011 04950 DU GEN 14. Special Handling Instructions and Additional Information GENERATOR'S CERTIFICATION: Thereby declare that the contents of this consignment are fully and accurately cosmided above by the proper stypping man'e, and are classified, packaged, marked and labeled/placerded, and are in all respects in proper condition for transport according to applicable informational and national governmental regulations. If expert shipment and I aim like Primary Exporter. I certify that the contents of this consignment conform to the terms of the attached EPA Aconomiedgment of Opision. I cortify that the weathern micelion statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) if I am a small quantity generator) is Generator's/Offeror's Printed: yped Name MURTHUR CHEIMING WHEL MILHER ON BELLEVE OF ALLONGE & ELECTION 16. International Shipments Port of entralexit; Export from U.S. Transporter algrature (for caports only): Date leaving J.S. 17. Thereporter Adenowlogoment of Roccipt of Materials Transporter 1 Printerly upod Kamo Transporter 2 Printer/Typed James 18. Discrepancy 18a. Discresancy Indication Space Cuarthy Residue Ful Rejection Partial Rejection Manifest Reference Number: 18b. Alternate Facility (or Generator) U.S. EPA IC Number Facility's Phone: DESIGNATED 180 Signature of Albernate Facility (or Generator) Merally DEY 13. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment disposal, and recycling systems) 20. Designated Facility Owner or Operator: Certification of receipt of hezardous macarials severed by the manifest except as noted in from 189 Printed Typed Na

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| 35. Di | riteparcy | | | | |
| | | | | | Memographics |
| | | | | | |
| 36. Fa | zardous Waste Report Management Methoc Godes (i.e., codes for hazarcous waste treatment, cispos | sal, and recycling systems) | | | |
| | | | | | Medical |
| | 1 | 1 | | 1 | |
| Form | N7CO-22A (Rev. 3-05) Previous editions are obsolete. | DESIG | NATED FACILITY TO F | DESTINATION STATE (IF I | SEU/IIIDED! |
| | | | | | -wallen! |

THE HAZARDOUS WASTES IDENTIFIED ON THE HAZARDOUS WASTE MANIFEST ILENTIFIED ABOME AND REARING TO LIFE HAZARDOUS WASTE COOKS US FED SELOW ARE RESTRICTED WASTES WASTE MODIFIED FROM LAND OF A WITHOUT FURTHER TREATMENT UNDER THE LAND DISPOSAL RESTRICTIONS, 40 CER PART 263 / 108.21, ADD 14 3004(C) IN ACCUREANCE WITH 40 CFR 268 7(0), THE EPA WASTE CODE, WASTE SUBCATEGORY, AND TREATSISHING GROWE'S AS APPLICABLE, ARE INCLUDED BELOW

INSTRUCTIONS ... COMPLETE ALL SECTIONS. REFER TO PAGE 3 OF THIS FORM FOR KEY TERMS/DEFINITIONS.

Column 1 Line Item. Enter the manifest line item number (e.g., 11a) that corresponds to the waste code(s).

Column 2 - Waste Codes/Subcategory: Check off all applicable waste codes. For D001 through D043, also chack applicable subcategory, for F001 through F005, check applicable constituents.

. Wastewater/Non-wastewater: Check off "WW" for wastewater and "Non-WW" for non-wastewaters.

Column 4 - LDR Handing Code: Circle the appropriate handling code, as follows:

1 = The waste is a characteristic hazardous waste D001, D002, D003, D004-D011, or D018-43 which is intended for treatment/disposal in a CWA system, CWA-equivalent system, or Class I SDWA system. Underlying Hazardous Constituents

(UHCs) are NOT required to be identified.

The waste is a characteristic hazardous waste D001 High TOC Ignitable Liquids Subcategory (i.e., greater than or equal to 10% TOC) Pursuant to 40 CFR 268.40, the waste must be treated using organic recovery (RORGS) or combustion (CMBST) technology. UHCs are NOT required to be identified.

The waste is a characteristic hazardous waste D001 (other than High TOC Ignitable Liquids), D002. D003 Explosive, Water Reactive or Other Reactive subcategory, D004-D011, D012-17 non-wastewater, or D018-43 which is intended for treatment/disposel in a non-CWA system, non-CWA-equivalent system, or non-Class I SDWA system located in the United States. All UHC's which are reasonably expected to be present must be identified, except for D001 waste that is intended to be treated using organic recovery (RORGS) or combustion (CMBST) technologies. Identify UHC's by completing Sections I and IV of CH

using organic recovery (RORGS) or combustion (CMBST) technologies. Identify UHC's by completing Sections I and IV of CHI Form LDR-1 Addendum and attach completed Addendum to this form.

The waste is a characteristic (i.e., D-code) or listed (i.e., F-, K-, U-, or P-code) hazardous waste which is intended for export and treatment/disposal at a facility located outside the United States. LDR treatment standards do not apply to hazardous waste treated/disposed in a foreign country, and per USEPA guidance, the identification of UHC's (if applicable) is not required for hazardous waste that is intended to be exported. Note however that if the exported waste is subsequently returned for treatment/disposal in the United States, all applicable LDR regulations would apply and a revised LDR notification would be

required.

The waste meets the definition of hazardous debris pursuant to 40 CFR 268.2(h) and is intended for treatment/ disposal in compliance with the alternate debris treatment technologies of 40 CFR 268.45. In accordance with the requirements of 40 CFR 268.7(a)(2): the contaminants subject to treatment (CSTT's) must be identified as part of this notification. Identify CSTT's by completing Section III and IV of the CHI Form LDR-1 Addendum and attach completed Addendum to this form. These constituents are being treated to comply with 40 CFR 268.45.

The waste is a characteristic waste D003 Reactive Sulfide, Reactive Cyanide, or Unexploded Ordnance subcategory, a characteristic waste D012- 17 wastewater, or a listed (i.e., F-, K-, U-, or P-code) hazardous waste. UHC's are NOT required to be identified.

The waste is a lab pack that is intended for incineration using the alternative lab pack treatment standard under 40 CFR 268.42(c).

UHC's are NOT required to be identified; however, the generator must complete and attach the lab pack certification statement on CHI Form LDR-LP. Note that in accordance with 40 CFR Part 268 Appendix IV, lab packs which contain waste codes D009, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, and U151 are not eligible for

NOTE: IF THE WASTE IS A SOIL CONTAMINATED WITH A LISTED OR CHARACTERISTIC WASTE AND THE GENERATOR WANTS TO USE THE ALTERNATE TREATMENT STANDARD FOR SOILS, CONTACT CORPORATE COMPLIANCE FOR THE APPROPRIATE LDR NOTIFICATION FORM.

SECTION I. CHARACTERISTIC WASTES D001 THROUGH D043

| | ABACIERISTIC WASTES DUOT TEROUGH DO43 | | | | | | |
|--|--|--|-----------|----------------------------|------------------|----------------------------|------------------|
| COLUMN 1: LINE ITEM SEE MANIFEST | COLUMN 2 WASTE CODE / SUBCATEGORY | COLUMN 3: WASTEWATER/ NON-WASTEWATER | ۴ | | OLU | | |
| унды (б. Биопальной польторицары). «Дадабу?» б борон компория польтория | [] D001 Ignitables, except High TOC subcategory [] D001 High TOC Ignitable Liquids Subcategory (Greater than or equal to 10% TOC) | []WW []Non-WW []Non-WW only | 1 1A | 2 | 3 3 | 4 | 6 |
| | [] D002 Corrosives [] D003 | []WW []Non-WW | 1 | . 2 | 3 | 4 | 6 |
| - | [] Reactive Sulfide, per 261.23 (a)(5) [] Reactive Cyanide, per 261.23(a)(5) [] Explosive, per 261.23(a)(6), (7) & (8) [] Water Reactive, per 261.23(a)(1), (3) & (4)' [] Other Reactive, per 261.23(a)(1) [] Unexploded Ordnance, Emergency Response [] D004 Arsenic | | 1 1 1 1 1 | 3 3 2 2 2 3 | 4 3 3 4 | 5 5 4 4 4 5 | 6 6 6 6 |
| Control of the Contro | () D005 Barium | []WW []Non-WW | , 1 | 2 | 3 | 4 | 6 8 |
| | [] C006 [] Cadmium | []WW []Non-WW | 1 | _ | _ | • | |
| | [] Cadmium Containing Batteries [] D007 Chromium [] D008 | [] Non-WW only [] WW [] Non-WW | 2 | 2 3 2 | . 3 6 3 | 4 | 6 6 |
| | () Lead () Lead Acid Batteries | [] WW [] Non-WW {] Non-WW only | 1 2 | 2 3 | 3 6 | 4 | 8 |
| | | CHI Form LDR-1, Page 1 of | 3 | | (Elle | clive | 12/07/05 |

[Effective 12/07/05]

SECTION I CHARACTERISTIC WASTES 000 (40 (CONTINUED)

| COLUMNI | -DDL4484-2 | coldistra; | . dahara |
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| SCC BOSTORE | Şi | MINIMASTEMATER | a constant for 1 a.s. |
| | [] 0009 | | |
| and the second | [] Low Mercury, less than 260 mg/kg Mercury | £ 11000 € 200 · · · · · · · | |
| | High Mercury Organic Subcategory | | 1 2 3 4 |
| | [] High Mercury Inorganic Subcategory | Non-WW only | 2 3 4 |
| | () CO10 Selenium | Non-WW only WW I Non-WW | 2 3 4 6 1 2 3 4 6 1 2 3 4 6 2 3 4 5 6 2 3 4 5 6 |
| | () 0011 Silver | 1 1 | 1 2 3 4 6 |
| 24 0 | [) D012 Endrin | [] WW [] Non-WW | 1 2 3 4 6 |
| | D013 Lindane | []WW [Non-WW | 2 3 4 5 6 2 3 4 5 6 |
| - | [] D014 Methoxychlor | []WW []Non-WW | 2 3 4 5 6 2 3 4 5 6 |
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| AC fortestament oppositions | [D017 2.4.5 TP (Silvex) | []WW []Non-WW | 2 3 4 5 6 2 3 4 5 6 2 3 4 5 6 2 3 4 5 6 |
| *************************************** | () D018 Benzene | []WW []Non-WW | 23456 |
| Language American | D019 Carbon tetrachloride | []WW []Non-WW | 1 2 3 4 6 |
| | D020 Chlordane | []WW []Non-WW | 1 2 3 4 6 |
| ************* | [D021 Chlorobenzene | 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 1 2 3 4 8 1 2 3 4 6 1 2 3 4 6 1 2 3 4 6 |
| ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | i D022 Chloroform | [] WW [] Non-WW [] WW [] Non-WW | 1 2 3 4 6 |
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| | () D027 1,4-Dichlorobenzene | []WW []Non-WW | 1 2 3 4 6 |
| | [] D028 1.2-Dichloroethane | []WW []Non-WW | 1 2 3 4 6 |
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| and the second second | [] D031 Heptachlor (and its epoxide) [] D032 Hexachlorobenzene | WW-ncM[] WW[] | 1 2 3 4 6 |
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| | [] D034 Hexachloroethane | []WW []Non-WW | 1 2 3 4 6 |
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| Assistante management | [] D036 Nitrobenzene | [] WW [] Non-WW | 1 2 3 4 6 |
| Min. | [] D037 Pentachlorophenol | I IWW [I Non-WW | 1 2 3 4 6 1 2 3 4 6 |
| | D038 Pyridine D039 Tetrachtoroethylene | []WW []Non-WW | 1 2 3 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 |
| | D040 Trichloroethylene | []WW []Non-WW | 1 2 3 4 6 |
| Annual Sales de Atlantiques | D041 2,4,5 Trichlorophenol | []WW []Non-WW []WW []Non-WW | 1 2 3 4 6 |
| and the property of | [] D042 2,4,6-Trichlorophenol | []WW []Non-WW []Ww []Non-WW | 1 2 3 4 6 |
| **** | [] D043 Vinyl Chloride | []WW []Non-Wv | 1 2 3 4 6 |
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| SECTION II. SP | ENT SOLVENT WASTES F001 THROUGH F005 | | |
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| SEE MANIFEST | WASTE CODE / SUBCATEGORY | WASTEWATER! | HANDLING CODE |
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| ——(- \dag{/}. | 1. ALL F001-F005 [] 12. Cyclohexan | one | [] 25. Pyridine |
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| 112 | 1 n-Ruhd eleche) | anol (F005) | XI 27. Toluene |
| []5 | 5. Carbon disulfide 1.1.15 Ethyl acotate | | [] 28. 1, 1, 1-Trichloro- |
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| | i. 0-Clesui | hol | ethane XI. 30. Trichloroethylene |
| | dictional form | | [] 31. 1,1,2-Trichloro- |
| | distinguish from [] 20. Methylene ch | loride | 1,2,2-trifluoroethane |
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| | distinguish from [] 22 Methyl isobut | Aı keroue | methane |
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CHI Form LDR-1, Page 2 of 3

[Effective 12/07/05]

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| | | | | | l Services Inc | | | | | | MAD | 039 | 3221 | 250 | |
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| | | | Exporter, I certify that I certify that the waste | the contents of this or minimization statems | onsignment contours to the ac- ent identified in 40 CFR 262.2 | ?7(a) (if I am a | ched EPA Ackr large quantity | nowledgme generator) Signature | nt of Consent. or (b) (if) am a s | mail quantity | generator) is true. | - | | | ay Year |
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| | 5 | 18b | . Alternate Facility (or | ueneratif) | | | | | | | | | | | |
| | FAC | Far | :Rity's Phone: | | | | | | | · | | | | Month | Day Year |
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| | SIA | <u>_</u> | Umpudana Masta Pla | nori Managemeni his | hod Codes (i.e., codes for h | zardous wast | e treatment, di | sposal, and | recycling system | ne) | | | | | |
| | DESIGNATED FACILITY | 19. 1. | Hazarious Wasia Ke | A / / > | 2. | · · · · · · · · · · · · · · · · · · · | | 3. | | | 4. | | | | |
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| | N | 20 | Designated Facility Conted/Typed Name | Winer or Operator: Ce | nification of receipt of hazard | ious materials | COVERED BY BIG | Sign | Ph. | TAT | Mera | 0 | 1 | Month | |
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| Π | (Continuation Sheet) MoD 007152903 | 0/2 | 2 | 0233 | 209 | 4 FIF |
| - | (Continuation Sheet) MOD007152903 4. Generator's Name Northrop Grunman Guidance and Electronic | cs (D) | | | | |
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| | | | | U.S. EPA ID I | Jumbor | |
| | 5. Transporter 3. Company Name | × | | | | 2750 |
| | Clean Harbors Environmental | Jervices | <u> </u> | U.S. EPAID | Vumber | 2250 |
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| ╢┝ | Clean hayours ENV. Duri | 28. Contain | Δ/E | 29. Total | 30. Unit | |
| | 7a. 27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, | No. | Тура | Quantity | Wt./Vol. | 31. Waste Codes |
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| П | 32. Special Handling Instructions and Additional Information | | | | | |
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| | 35. Discrepancy | | | | | • |
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| E | 36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous weste treatment, disposal, | and recycling systems | 3} | | | |
| DESIGNATED EACH ITY | 36. Hazardous Wasta Report Management Metricu Codes (Lts., caces the independent washing and administration of the control of | | | | _ 1 | |
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| Ĺ | A Farm 9700 32A (Peru 3.05). Previous editions are obsolete. | DES | SIGNATE | FACILITY T | O DESTIN | IATION STATE (IF REQUIRED) |

CleanHarbors ENVIRONMENTAL SERVICES*

Land Disposal Restriction Notification Form

Page: 1 of 1

Printed Date :Apr 06, 2009

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| Generato | r: Northrop Grur | nman Guidance ar | nd Electronics C | | Manifest Tracking Ir | ifo. |
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| Glean Harbora Environmental Services Inc. | | | | |) d 3 d | 3 4 6 | 2 7 11 | ! |
| Transporter 2 Company Name | | | | U.S. EPA ID I | Number 3 () 3 () | 3 2 2 | 250 | · |
| Clean Horbora Environmental Services Inc | | | | U.S. EPA ID | | | | |
| Designated Facility Name and Site Address | | | | ARU | 0 0 6 2 | 748 | 192 | |
| 369 American Circle | | | | | | | | |
| E) Denado, AR, 71730 acilitys Phone: (870) 963-7173 | | | | | | | | |
| a. 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Num | nber, | 10. Conta | | 11. Total | 12. Unit | 13 | 3. Waste Co | des . |
| M and Packing Group (If any)) | | No. | Type | Quantity | Wt,/Vol. | FG02 | For | <u> </u> |
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| 75 Transporter - Company Name - | · T - 1 T | | | U.S. EPA ID | | 6587 A |
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| 16. Transporter 4 Company Name | Hostors Erry. Sky | 0100 <u></u> | | 1978 | D034 | 1325250 |
| 7a. 27b. U.S. DOT Description (including Prope | Shipping Name, Hazard Class, ID Number, | 20. 001112 | | 29. Total Quantity | 30. Unit Wt./Vol. | 31. Waste Codes |
| M and Packing Group (if any)) | | No. | Туре | Guartary | 1.1.2.10.1 | |
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| 32. Special Handling Instructions and Additional I | nformation | | • • | • | | |
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| 33. Transporter Acknowledgment of Rec Printed typed Name | eipt of Materials Signa | turpe / | 7 | | | Month Day |
| | hnson | 1/shim | Chille Contract | tur | | 1/2 1/8/ |
| 34. Transporter Acknowledgment of Rec | eipt of Materials . Signa | ture ' | | <u> </u> | | Month Day |
| Printed/Typed Name | (Earland Los CHA) | | WX | X day on | س علمندا | 1/1/4 |
| 35. Discrepancy | | | | | | |
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| 36. Hazardous Waste Report Management Meth | od Codes (i.e., codes for hazardous waste treatment, disposal, | and recycling system: | s) | | i | . • |
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Land Disposal Restriction

Page 1 of 1

| ENVIRONMENT | Hardo TAL SERVICES | ~ | Notificatio | n Form | Print Date: | 12/09/2008 |
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| MANIFESTI | | | Control of the Contro | 110-100-100-100-100-100-100-100-100-100 | | <u> </u> |
| Generator: | Northrop Gr | rumman Guidance a | and Electronics Company | | Manifest No | <u>-</u> |
| Address: | 4811 W Kea | arney | | | 000577414FLE | |
| | Springfield, | | | Sales O | der No: DK2141336 | |
| | | 7152903 | | | /// | |
| LINE ITEM I | NFORMATIO | ON | | | | |
| Line Item: | Page No: | Profile No: | Treatability Group: | LDR Disposal Catego | | |
| 1 | 1 | CH339288 | NON- WASTEWATER | 2 : This is subject to | LDR. | |
| EPA Waste | Codes | | | EPA Waste Subcatego | У | |
| F002 F003 F0 | 05 | and the second s | Certification | NONE | · Andrews Harry | Applies to Manifest Line Items |
| Pursuant to | o 40 CFR 2 | 68.7(a), I hereby no | tify that this shipment cont | ains waste restricted und | der 40 CFR Part 268. | 1 |
| Signature | an | where available, I | s attached Print N | ame: Ada_S | eyla- | 4 |
| Title: | Enu. | E | Date: | 12/10/08 | | |

| UNIFORM HAZARDOUS 1: Generator ID Number WASTE MANIFEST MA C D D C 7 1 5 2 9 1) | Secretary and the second secretary and the second s | 3, Emergency R | 19 37 18 | 00 | |)598 | FLE |
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| 5. Generator's Name and Mailing Address North righ Countries: North righ Countries: North righ Countries: North right Countries: North ri | | | oddress (If different V Kearrey , P Leid , M.C. 65 | 0 Box 1693 | | | |
| 6 Transporter Company Name Claser Harbors Eng Services Ins | | | | and the second second second | 11 2 2 2 | 3225. | o · |
| 7. Transporter 2 Company Name | , | | | U.S. EPA ID N | 00 | oon | 770 |
| 8. Designated Facility Name and Site Address Ligan Matheria Ed Distriction Liu. 2004 Appropriate Circle Ed Characto, AF, 74736 Facility's Phone: (2.71), 1963-7473 | | | | U.S. EPA ID N | lumber | 4 6 1 0 | |
| 9a. 9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID N HM and Packing Group (if any)) | umber, | 10 No | Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste | Godes |
| Waste Aeroscus I. Lünteromore | | 0 0 | | 00002 | 201.0 | Y 001 | |
| TRO, WASTE FLAMMABLE LIQUIDS, N.O.S. JUM | |) (100 (100 (100 (100 (100 (100 (100 (10 | DE | 00100 | • | poor from | |
| Waste Potassium Cermanisanatra Luni | | 0.0 | 1 0.5 | 00300 | |)001 | |
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| 16. International Shipments Import to U.S. | i Export from | | ort of entity/exit: | - | | 117 | i 3 07 |
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| 18a, Discrepancy Indication Space Quantity | /ре | Resid | ue èference Numbér: | Partial Rej | ection | Įρ | II Rejection |
| 18b. Atternate Facility (or Generator) Facility's Phone: | | Transition 1 to | | U.S. EPAID I | lumber. | | |
| 18c. Signature of Alternate Facility (or Generator) 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous wa | iste treatment, disposa | l, and recycling sy | slems) | | | Month | Day Yes |
| Designated Facility Owner or Operator: Certification of receipt of hazardous material | 3, is covered by the mani | fest except as not | LU(ad in Item 18a 💎 | | ijili | | |
| Printed/Typed Name | | nature | | E Transfer to | | Month | Day Yea |

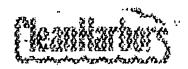
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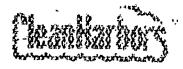




Land Disposal Restriction Notification Form

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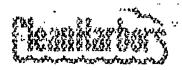


Land Disposal Restriction Notification Form

Page 2 of 5

Date: 12 / 13 / 2007

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Land Disposal Restriction Notification Form

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Land Disposal Restriction Notification Form

Page 4 of 5

Date 12/13/2007

Manifest Dooument No: 00001

Manifest No

Wanifest No

Address: 4811 W Kearney

Springfield, MO 65903

Manifest No

001020598 FLE

Springfield, MO 65903

Sales Order No: CK1709663

Certification

Certification

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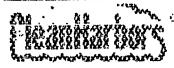
Pursuant to 40 CFR 268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Fart
7 9 10 11
12 13 15 17
18 19 20 21
23 24 26 26

This waste is not restricted as specified in 40 CFR 268 Subpart D.

46 27 28 29
30 31 32 33
34 35 36

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a faise certification, including the possibility of a fine and impresonment.

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Land Disposal Restriction Notification Form

Page 5 of 5

Date: 12 / 13 / 2007

| MANIFEST INFORMATION | | | | | |
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| Generator: Northrop Grumman | Manifest No | | | | |
| Address: 4811 W Kearney | 001020595 FLE | | | | |
| Springfield, MO 65803 | Sales Order No: CK1709863 | | | | |
| EPA ID# M O D 0 0 7 1 5 2 9 0 3 | Manifest Document No: 00001 | | | | |

| Waste analysis data, where available, is attached | · . |
|---|-----------------------|
| Signature: a & L | Print Name: Ada Syli- |
| Title: Env. Fry. | Date: 12/13/07 |





Contained-out determination Kifer, Evan Dedriel Newsome 12/06/2010 01:40 PM Show Details

1 Attachment



Contained-Out Determination Approval Document with Signature 3-04-10.pdf

Let me know if you need anything else!!

Department of Natural Resources Division of Environmental Quality Hazardous Waste Program

"Contained-Out" Determinations for the Former Litton Systems, Inc. Site 4811 West Kearney Street, Springfield, Missouri

March 1, 2010

I. INTRODUCTION

Northrop Grumman Systems Corporation (Northrop Grumman), owner of the former Litton Systems, Inc. site (Litton) in Springfield, Missouri, has requested that the Missouri Department of Natural Resources (MDNR) make contained-out determinations for trichloroethylene (TCE), methyl ethyl ketone, methylene chloride and 1,1,1 trichloroethane. Contained-out determinations would apply to environmental media generated at the site in conjunction with site remediation activities.

MDNR is currently overseeing work being conducted at the former Litton site by the site owner, Northrop Grumman. Activities at the site are focused on the investigation, evaluation, and implementation of remediation for soil and groundwater contamination that exists within identified Areas of Concern (AOCs).

Within site soils, three subcategories have been identified. These are: 1) soils contaminated with metals, primarily copper; 2) soils contaminated with volatile organic compounds (VOCs), primarily trichloroethylene (TCE); and 3) soils contaminated with both metals and VOCs. The following list identifies the various site AOCs and the associated contaminants found there. These areas are identified on the attached figure.

- 1.) Area Near SB-19 (Pilot Study Area) VOCs
- 2.) Former New Acid Pit (NAP) VOCs and Metals
- 3.) Former Original Acid Pit (OAP)(including the OAP East and West and Sludge Pit East and West) VOCs and Metals
- 4.) Former Percolation Terrace Metals
- 5.) Former A/B Lagoon Metals
- 6.) Building Footprint Subfloor VOCs and Metals
- 7.) Former Sanitary Lagoon Metals

The technology selected to remediate site VOC contamination is Electrical Resistive Heating (ERH), which essentially heats the soil and groundwater column to the bedrock interface within a specific AOC to volatilize the VOCs. The subsequent vapors and moisture are extracted, using a single phase or dual phase extraction system, and treated prior to discharge. The remediation of soils contaminated with VOCs in the Pilot Study Area is complete and the remediation of soils in the NAP with both metals and VOCs is near completion. The technology selected for AOCs having both metals and VOCs contamination is treatment using ERH, followed by the installation of an earthen cover or paved barrier. ERH is extremely effective at treating soil contaminated with VOCs and a

target concentration of 0.4 mg/kg of TCE in soil has been approved as the remediation goal. This concentration is lower than the site-specific calculated risk level of 4.6 mg/kg based on the *Targeted Risk Assessment of On-Site Soils, November 2006*, prepared by Stantec Consulting, formerly SECOR International.

Some of the remediation and general construction activities being conducted at the site may generate carbon from soil vapor treatment, sediment from water treatment or well components, soil borings, and possibly excavated soil for offsite disposal. This has raised the question of whether any of the excavated soil or solid environmental media generated onsite would be subject to Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste requirements before and after treatment. Site investigations and review of prior disposal practices indicate that some site soils within certain AOCs were contaminated by listed hazardous wastes. Consequently, some soil and solid environmental media may be hazardous waste, if excavated from these AOCs, unless the state makes a site-specific risk-based determination that the soil in these AOCs does not contain hazardous waste. Such a determination is generally referred to as a contained-out determination. Without this determination, possible future development of the site could be limited due to the costs of handling, treating, and disposing of such materials from the site.

Relevant U.S. Environmental Protection Agency (EPA) policies and guidance are summarized in a memo titled, *Management of Remediation Waste Under RCRA*, from Timothy Fields, Jr. and Steven A. Herman, EPA 530-F-98-026, (October 14, 1998). We have made extensive use of the discussion of the "contained-in" policy found in the preamble to the LDR Phase IV Final Rule, 63 Fed. Reg. 28556 (May 26, 1998).

II. BACKGROUND

A. Characteristic and Listed RCRA Hazardous Waste Identification

Some of the site soils and solid environmental media may fail the TCLP test and exhibit a RCRA toxicity characteristic of hazardous waste. Consequently, that material, if removed and managed outside of an AOC, would be subject to the Missouri Hazardous Waste Management Law and its implementing regulations. However, it is anticipated that a significant amount of the soil and solid environmental media generated at the site will not fail TCLP and, consequently, will not be considered characteristic hazardous waste. Nonetheless, some soil and solid environmental media that pass the TCLP test may still require handling as hazardous waste, if they contain low detections of listed hazardous waste, even if the removed soils were within an AOC treated by ERH.

Listed hazardous waste is identified by the source of the hazardous waste, rather than by the concentration of hazardous constituents. Analytical testing alone, without information pertaining to the waste's source, will not produce information that will conclusively indicate whether a waste is a listed hazardous waste. Depending on its source, a chemical found in a soil sample even at low levels may be an F-listed hazardous waste from a non-specific source (40 C.F.R. § 261.31), a K-listed hazardous waste from a

specific source (40 C.F.R. § 261.32), or a P-listed or U-listed hazardous waste that is a discarded commercial product, off-specification species, container residue, or spill residue thereof (40 C.F.R. § 261.33).

B. <u>Determination of When Contamination is Caused by Listed Hazardous Waste</u>

In many remediation situations, very little is known about the source of the hazardous substances at a site. The EPA recommends that the lead agency use available site information, such as storage records and manifests in an effort to ascertain the sources of wastes but "when this documentation is not available or inconclusive, the lead agency may assume that the wastes (or contaminants) are not listed RCRA hazardous wastes." See *Management of Remediation Waste Under RCRA*, and discussion in preambles to the then proposed regulations, 53 Fed. Reg. 5144 (December 21, 1988), 55 Fed. Reg. 8758 (March 13, 1990), and 61 Fed. Reg. 18805 (April 29, 1996). The EPA approach is that a hazardous substance found in a site sample is not a specific listed hazardous waste when generated unless there is evidence indicating that the source of the hazardous substance itself is a listed hazardous waste. Since there is often very little or no evidence regarding the source of hazardous substances found in soil at a site, the hazardous substances are generally not considered to be listed hazardous wastes.

At this site, much of what is known about the historical handling and management of waste at the site was obtained from several former site employees. The information obtained from these former employees suggests that F-listed hazardous waste may have been disposed of in discreet areas at the site. Extensive sampling conducted at the site thus far has indicated the presence of trichloroethylene, 1,1,1 trichloroethane, methylene chloride, and methyl ethyl ketone. The information from the former employees and the sampling have suggested the presence of these VOCs as an F-listed hazardous waste at three AOCs located at the site:

- Former New Acid Pit (NAP),
- Former Old Acid Pit (OAP); and
- a portion of the Building Footprint Subfloor beneath the former Electroless plating area.

See Figure. The source of contamination at the Pilot Study Area is unknown.

C. The "Contained-in" Policy

EPA policy decisions have established that contaminated environmental media, such as soil and groundwater, are not themselves hazardous wastes because the media are not inherently waste-like in nature and, therefore, are not solid wastes. Rather, the EPA's interpretation has been that such media, if excavated and managed outside an AOC, must be managed as hazardous wastes if they exhibit a characteristic of hazardous waste or contain listed hazardous waste. Conversely, if the soil does not contain hazardous waste, then the soil does not need to be managed as hazardous waste as discussed in 63 Fed. Reg. 28521 (May 26, 1998):

In practice, the EPA has applied the "contained-in" principle to refer to a process where a site-specific determination is made that concentrations of hazardous constituents in any given volume of environmental media are low enough to determine that the media does not "contain" hazardous waste. Typically, these so called "contained-in" determinations do not mean that no hazardous constituents are present in environmental media but simply that the concentrations of hazardous constituents present do not warrant management of the media as hazardous waste. For contaminated soil, the result of "contained-in" determinations is that soil no longer "contains" a hazardous waste.

This is sometimes also called a "contained-out" or "no longer contained-in" determination.

In the October 14, 1998, EPA memo, Management of Remediation Waste Under RCRA, cited above, "contained-in" determinations are described as follows:

In the case of media that are contaminated by listed hazardous waste, current EPA guidance recommends that "contained-in" determinations be made based on direct exposure using a reasonable maximum exposure scenario and that conservative, health-based, standards be used to develop the site-specific health-based levels of hazardous constituents below which contaminated environmental media would be considered to no longer contain hazardous waste. Since this determination involves development of site-specific health-based levels, the approval of the EPA or an authorized state is required.

This memo also provides a mechanism to eliminate managing media as a listed hazardous waste if:

- (1) it no longer exhibits a characteristic of hazardous waste; and
- (2) concentrations of hazardous constituents from listed hazardous wastes are below health-based levels.

III. CONTAINED-OUT DETERMINATIONS FOR LISTED HAZARDOUS WASTES AT THE SITE

The contained-out determinations for listed hazardous wastes proposed herein are intended to apply to the soil and solid environmental media generated by current and future site activities within the NAP, OAP, and Building Footprint Subfloor AOCs at the former Litton site. These are the only areas of the site where there is evidence indicating that the source of the soil impacts may have been listed hazardous wastes. Therefore, pursuant to the EPA guidance referenced above, a contained-out determination is not needed for other areas of the site where there may be soil impacts since such impacts would not contain listed hazardous wastes.

In making a determination of appropriate contained-out health-based levels for excavated soil and solid environmental media generated on-site, it is appropriate to consider any possible future use of the on-site area, as well as the potential use of any offsite disposal site for soil or solid environmental media removed from the site. Although the future use of any offsite disposal facility such as a subtitle D or municipal landfill may reasonably

be expected to continue to be a landfill, the contained-out levels being proposed in this approval document for excavated soils and solid environmental media generated onsite are largely based on EPA Region 6 Regional Screening Levels (RSLs) for residential soil last updated in 2008 (which are the same as Region 3 & 9 RSLs). The conservative approach of utilizing residential screening levels considers potential future use of the onsite area as well as offsite alternatives other than a landfill.

Sampling during the investigation of the site has identified the presence of two potentially listed hazardous wastes that also could be potential toxicity characteristic hazardous wastes: trichloroethylene and methyl ethyl ketone. In addition to the potential listed hazardous waste designation (F002 and F005) for each of these compounds, trichloroethylene may be a toxicity characteristic hazardous waste (D040), if present at concentrations above the regulatory level of 0.5 mg/L. The compound methyl ethyl ketone may be a toxicity characteristic hazardous waste (D035), if present at concentrations above the regulatory level of 200 mg/L. If the results of TCLP sampling exceed the toxicity characteristic levels for these or any other contaminant or exhibit any other hazardous characteristic, soil or solid environmental media will be managed as a characteristic hazardous waste.

Determination 1

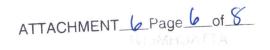
The MDNR is making a determination regarding trichloroethylene, such that any soil or solid environmental media removed from the NAP, OAP, or the Building Footprint Subfloor Area that contains trichloroethylene at concentrations below 2.8 mg/kg is no longer deemed to be an F002 hazardous waste. Only trichloroethylene present in soils in these areas at concentrations greater than 2.8 mg/kg will be deemed an F002 hazardous waste, if removed and managed outside these areas. This contained-out level of 2.8 mg/kg is the EPA Region 6 RSL for residential soil.

Determination 2

The MDNR is making a determination regarding methyl ethyl ketone, such that any soil or solid environmental media removed from the NAP, OAP, or the Building Footprint Subfloor Area that contains methyl ethyl ketone at concentrations below 28,000 mg/kg is no longer deemed to be an F005 hazardous waste. Only methyl ethyl ketone present in soils in these areas at concentrations greater than 28,000 mg/kg will be deemed an F005 hazardous waste, if removed and managed outside these areas. This contained-out level of 28,000 mg/kg is the EPA Region 6 RSL for residential soil.

Determination 3

The MDNR is making a determination regarding methylene chloride, such that any soil or solid environmental media removed from the NAP, OAP, or the Building Footprint Subfloor Area that contains methylene chloride at concentrations below 11 mg/kg is no longer deemed an F002 hazardous waste. Only methylene chloride present in soils in these areas at concentrations greater than 11 mg/kg will be deemed an F002 hazardous waste, if removed and managed outside these areas. This contained-out level of 11 mg/kg is the EPA Region 6 RSL for residential soil.



Determination 4

The MDNR is making a determination regarding 1,1,1 trichloroethane, such that any soil or solid environmental media removed from the NAP, OAP, or the Building Footprint Subfloor Area that contains 1,1,1 trichloroethane at concentrations below 680 mg/kg is no longer deemed an F002 hazardous waste. Only 1,1,1 trichloroethane present in soils in these areas at concentrations greater than 680 mg/kg will be deemed an F002 hazardous waste, if removed and managed outside these areas. This contained-out level of 680 mg/kg is the saturation concentration for 1,1,1 trichloroethane. Levels above this concentration raise concerns about physical hazards such as flammability and/or explosivity due to the presence of free phase product. A level of 680 mg/kg is significantly below the EPA Region 6 RSL for residential soil of 9,000 mg/kg, but was recommended by the Missouri Department of Health and Senior Services.

IV. CONCLUSION

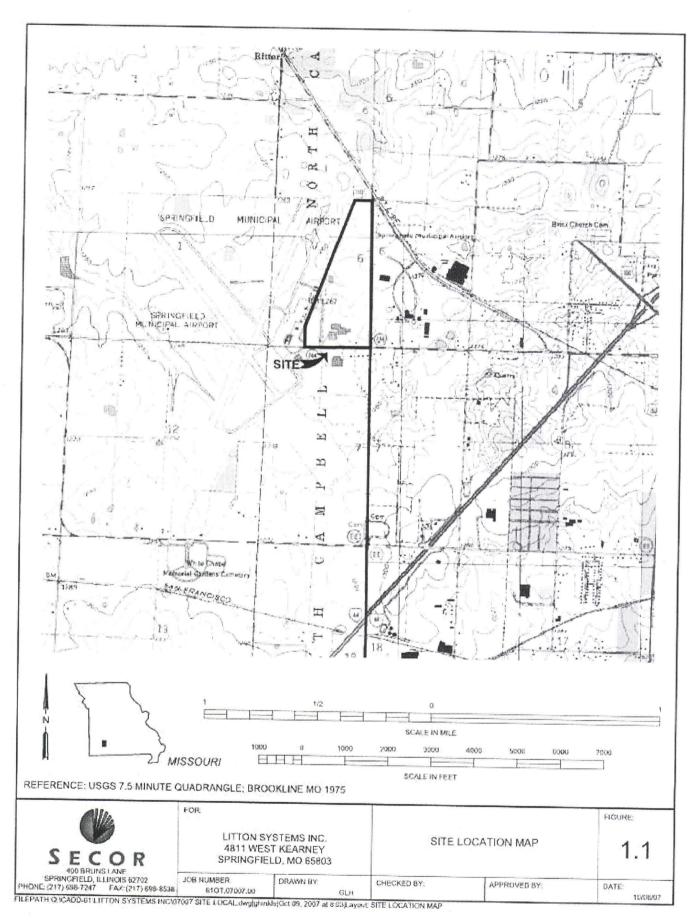
The Superfund Section, with input from the Compliance and Enforcement Section of the Hazardous Waste Program, the Department of Health and Senior Services, and the Missouri Attorney General's Office, recommends and requests the HWP approve of the above determinations such that soil and solid environmental media generated by current and future site activities in the NAP, OAP and Building Footprint Subfloor Area at concentrations below the contained-out levels specified above are not deemed to contain the listed hazardous wastes of trichloroethylene, 1,1,1 trichloroethane, methylene chloride, and methyl ethyl ketone and, thus, do not need to be managed as listed hazardous wastes. If the soil and solid environmental media that meet the contained out criteria exhibit any hazardous characteristic, they will be managed as characteristic hazardous wastes.

APPROVED:

Robert Geller, Director

Hazardous Waste Program

March 4,2010
Date



HANDLER INFORMATION REPORT

Procedures for Inspectors performing Site Visits

If the facility wants to make a change, they must complete a Notification of Regulated Waste Activity form # MO780-1164, and send it to the Department of Natural Resources, Waste Management Program, PO Box 176, Jefferson City, MO 65102. The form can be found at http://www.dnr.mo.gov/forms/780-1164.pdf

If during the course of the site visit, the inspector/investigator becomes aware of any changes which should be made to the information printed on this form, please make the corrections and return the form to: Beth Koesterer, AWMD/WEMM.

EPA RCRA ID Number:

MOD007152903

Name of Company/Site: Location of Site:

NORTHROP GRUMMAN GUIDANCE AND ELECTRONICS COMPANY INC

4811 W KEARNEY ST

SPRINGFIELD, MO 65803

GREENE County

Land Type:

Private

NAICS:

56291 - REMEDIATION SERVICES

Mailing Address:

P O BOX 1693 MAIL STOP 1401 BALTIMORE, MD 21203

Site Contact:

Email:

ADAM E SAYLOR Job Title:

Address:

SR ENVIRONMENTAL ENGINEER

P O BOX 1693

MAIL STOP 1401

BALTIMORE, MD 21203 ADAM. SAYLOR@NGC.COM

Phone Number: (410) 993-7080

Current Owner of Site:

Owner Type:

NORTHROP GRUMMAN GUIDANCE & ELECTRONICS

Private

Current Operator of Site:

Phone Number: Operator Type: NORTHROP GRUMMAN GUIDANCE & ELECTRONICS

(410)993-7080

Private

TYPE(S) OF REGULATED ACTIVITY: Federal Large Quantity Generator

Hazardous Wastes Handled:

F002 F003 F005

I 03/13/92 1 1st N 09/27/99 N 05/04/09 1

Certified by Notification

on 02/22/10 by

JAY TOLLE 02/04/10

MANAGER, ENVIRONMENTAL PROGRAMS & REMEDIATION

Date of Site Visit: 11/18/10

Name of Inspector (Please print): Dedvie (Check one): FPA R7 ENSV DEPA R7 Contractor NOWCC/SEE Investigator

Signature of Inspector:

ATTACHMENT 7 Page

| Appendix 1-3 |
|---|
| Facility: Northrop Grumman Date: 11/18/10 Arrival time: 9:30AM |
| DRIVE-BY |
| 1. Drive-by conducted from public right-of-way? |
| 2. Determine the direction "North" with respect to the facility and provide a brief sketch of the layout and orientation (as can be viewed from the public right-of-way): |
| |
| |
| |
| |
| |
| |
| 3. Obvious concerns visible from public right-of-way (photos)? Yes No - Containers - Tanks - Processing Equipment - Loading Areas |
| - Containers - Tanks - Processing Equipment - Loading Areas - Unloading Areas - Security Devices - Open Drums - Stressed Vegetation |
| -Unusual Staining - Unusual Odors - Obvious Discharges - Improper Disposal |
| - Safety Concerns - Other Concerns |
| Appendix 1-4 <u>SITE ENTRY AND INBRIEFING</u> sel report for discussion of arrangements made with Adam Saylor. |
| 1. Dused main entrance Entered during normal operating hours DExcessive delays (>1.5 minutes - denial of access?) - Do |
| 1. Subsed main entrance |
| 2. Facility Representative(s): Creg Michael Title: Sr. Engineer (07) |
| 2. Facility Representative(s): Greg Michael Mark Dengmore Title: Sr Geologist (since 22c) |
| Title: |
| THE. |
| 3. Does representative have intimate knowledge of all waste management practices? |
| How long in position? |
| |
| 4. Introduction: Presented credentials |
| Explained responsibility to provide accurate information and provided copies of Section 1001 and 1002 U.S.C. to facility |
| Yerified presence at correct facility (checked address/I.D.#) |
| Explained authority to conduct inspection (Section 3007 of RCRA) Explained the purpose, scope, and order of the inspection |
| Completed Multimedia screening checklist |
| Explained documentation process - worksheets, checklists, photos, notes, statements, etc |
| Provided SBRFA 3 closed facility going thru remediation |
| Obtained GPS reading Explained facility's right to claim CBI |
| |
| 5. Was full access granted? Yes By facility representative or Other (name): |
| ☐No - Access denied. Name of person denying access: |
| Time of denial: Contacted Adam Saylor on 11/16/10 and informed |
| him of inspection since no one on site, or |
| Reason for denial, or limitations placed on access: |

Inspector Worksheet

Inspector: DEDRIEL NEWSOME

JFA 110

| Facility Name: Northrop Grumman Address: 4811 West Kearney St | | ectronics Co. | Media: R | CRA | Federal Facility: 🗌 Yes | | | |
|--|-----------------------------|------------------|-----------------------|------------------|------------------------------------|--|--|--|
| City: Springfield | i ect | State: MO Z | IP : 65803 | County: Greene | | | | |
| Facility Activity: | Selection Criteri | a - 1: | | on Criteria - 2: | | | | |
| | LQG (KS,MO,N | NE) | | | | | | |
| | Activity #: | NAICS/SIC Code | | | | | | |
| | MOD007152903 | | | BETH KOEST | ER | | | |
| Quarter Requested: Any Quarter | Quarter: Fisca | I Year: 2011 | Last Inspection: | 12/06/2005 F | Planned Inspection: | | | |
| Major or Minor: ACS Code: | Forward C | Copy of MMSC to: | Comments: | | | | | |
| FF Commitment Comments: Federal Facility Program Commitment: | | | | | | | | |
| Reason For Inspection: | | | | | | | | |
| 11/18/10 | port Transmittal | Report Co | empletion | leted by the | | | | |
| yes No N\A Yes | No NA | Yes No | □ N A □ Yes | □ No □ | N A Yes No N\A | | | |
| MM Type MM Level | MM Participating F | Program * * A=C | AA, W=CWA, R=R | CRA. E/T=EPCRA/ | rsca. | | | |
| | | | T, C=CFC, U-I=UIC | | , | | | |
| MM Screening Complete? X Yes | □ No □ N\A | | | | FC | | | |
| MM Screening Forwarded? Yes | No If Yes, wh | o?→ ☐ CWA ☐ | ☐ CAA ☐ E/T☐ UIC☐ | ☐ EMS ☐ C | FC RCRA ISO 14001 J SPCC Wetlands | | | |
| Increase Finally and Community (1) | | | | | | | | |
| This facility has cle remediated under | osed + is in the oversig | the proof | cess of be DNR Sup | ing innerfund | estigated of | | | |
| Target Quality (Good / Bad - Why?) | | | | | | | | |
| Closed facility | | | | | | | | |
| | | | | | 15112110 | | | |
| | **** For Co | ntractor Insp | ections Only | *** | | | | |
| Contracting Officer: | | | Date of First | | Date of Final Report | | | |

MEMORANDUM

SUBJECT: RCRA Compliance Evaluation Inspection at

Northrop Grumman Guidance and Electronics Company, Inc., Springfield, MO

MOD007152903

FROM:

Dedriel Newsome, Environmental Engineer

ENSV/EFCB

THRU:

John Houlihan, Chief

ENSV/EFCB

TO:

Donald Toensing, Chief

AWMD/ RESP

At the request of Air & Waste Management Division (AWMD), I performed a Resource Conservation and Recovery Act (RCRA) compliance evaluation inspection (CEI) at the Northrop Grumman Guidance and Electronics Company, Inc. in Springfield, MO (Northrop-Springfield). Northrop-Springfield is located at 4811 W. Kearney St, Springfield, MO 65803. The mailing address is P.O. Box 1693, Mail Stop 1401, Baltimore, MD 21203. I conducted the inspection on 11/18/2010 under the authority of RCRA Section 3007(a), as amended. During the inspection, I collected the information and data necessary to determine compliance with the applicable regulatory and statutory requirements. This memo and attachments present the results of the inspection. I conducted the inspection as a Level B Multi-Media Inspection and the Multi-Media Screening Checklist is included as attachment 1. Based on the information obtained during the course of the inspection, I inspected the facility as a conditionally exempt small quantity generator (CESQG) of hazardous waste. According to the EPA RCRAInfo database, this facility was last inspected by the EPA on 12/6/2005. Five violations were observed for management of satellite accumulation containers, job descriptions and incomplete manifests during the 2005 CEI.

Inspection Procedures

On the afternoon of 11/15/2010, I conducted a drive-by evaluation of Northrop-Springfield. There were no buildings visible on-site. Therefore, on 11/16/2010, I contacted Mr. Saylor, the facility contact listed in the EPA RCRAInfo database. I informed him that I wanted to conduct a CEI at the Northrop-Springfield facility. Mr. Saylor stated that he was located in

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12/2/10

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Baltimore, MD and that they had no company personnel located in Springfield, MO. Mr. Saylor and I made arrangements for me to meet with their contractor, Stantec Consulting (Stantec), Springfield, IL, at the trailer office located on-site on 11/18/2010 at 9:30A.M.

On 11/18/2010, I arrived at the site approximately 9:30A.M. and met two Stantec employees. They were Mark Densmore, Sr. Geologist, and Greg Michael, Sr. Engineer. They acted as the Northrop-Springfield facility representatives while I was on-site. However, they did not sign any of the inspection forms. Therefore, I emailed them to Mr. Saylor on 11/22/2010 for his signature. Mr. Saylor returned them on 11/23/2010 along with additional analytical information (see attachments 2 and 3). I also discussed my inspection findings with Mr. Saylor on the telephone at this time. Mr. Saylor requested that all EPA correspondence be sent to him at the above mailing address.

Facility Description

Northrop-Springfield is no longer operating. In approximately 2007, they sold what they could and demolished the building. Currently, Stantec is conducting on-site investigative and remediation activities. The investigative and remediation activities are being overseen by the Missouri Department of Natural Resources (MDNR), Division of Geology and Land Survey, Superfund Section. The MDNR contact is Evan Kifer located in Jefferson City, MO. Mr. Kifer stated that Northrop-Springfield is currently operating under a 1993 consent decree with MDNR that is in the process of being updated and expected to be finalized by December 2010. The contaminants are primarily tetrachloroethylene (TCE), 1,1,1-trichloroethane (TCA) and other "daughter" constituents. The areas of concern are shown on the layout included as attachment 4. Remediation activities currently include soil and groundwater treatment.

Soil remediation consists of Electrical Resistance Heating (ERH). A full-scale ERH system pilot was conducted on the New Acid Pit (NAP) area and was completed in approximately 2009. Based on the pilot results, an ERH system is currently being installed on the Original Acid Pit (OAP) Treatment Area (see attachment 3 for layout). The ERH system is expected to be operational by approximately January 2011 and the treatment is expected to take about six months. In general, the ERH system heats the soil to remove the contaminants. This generates steam and vapors which are captured. The steam is condensed and the water is discharged to an on-site wastewater treatment system (WWTS). The vapors from the high contaminated areas are treated in a catalytic oxidizer. The vapors from the low contaminated areas are treated in an activated carbon unit. The high and low contaminated areas are predetermined based on previous analytical sampling results.

Until about June 2010, contaminated groundwater was being extracted and treated in the on-site WWTS. The WWTS consisted of pumping the groundwater into a surge tank, treating it in an air stripper, and discharging it to the city sewer under a pretreatment agreement with the city. Northrop-Springfield has about 14 groundwater recovery wells on-site. Since June 2010, Emulsified Vegetable Oil (EVO) is being used to treat the contaminated groundwater. This treatment process consists of injecting a vegetable oil/bacteria culture mix into the groundwater for degradation of contaminants.

The manifest for the last shipment of hazardous waste manifested off-site when Northrop-Springfield ceased operating in 2007 is included as attachment 5f. Since that time, the wastes generated on-site consisted of the following:

- **Spent Activated Carbon** was generated twice from the ERH pilot study. It was generated on 3/25/2009 and 9/29/2008. It was collected in containers and manifested offsite on 4/9/2009 and 12/10/2008, respectively. It was manifested as a F002/F003/F005 hazardous waste to Clean Harbors (see attachments 5d and 5e for manifests).
- Soil Cuttings, Sampling Cores and Sediment are occasionally generated on-site. When they are generated from a contaminated area that is not RCRA hazardous, then they are handled as non-hazardous waste. When they are generated from a contaminated area that is RCRA hazardous, then they are handled as hazardous waste. On 8/17/2009, 7 tons of hazardous soil cuttings were generated on-site. They were manifested off-site on 9/28/2009 to Clean Harbors as a F002/F003/F005 hazardous waste (see attachment 5a for manifest). On 3/25/2009, 4950 pounds of hazardous sampling cores from the NAP pilot ERH system were generated. They were manifested off-site on 4/9/2009 to Clean Harbors as a F002/F003/F005 hazardous waste (see attachment 5c for manifest). On 9/28/2009, 9 tons of non-hazardous soil cuttings were manifested off-site to Clean Harbors (see attachment 5b for manifest).

A signed LDR notice for the 7 tons of F002 soil cuttings manifested off-site on 9/29/2009 could not be located at the time of the inspection. Mr. Saylor stated that they maintain a copy of the manifests on-site and he also maintains an official file in Baltimore, MD. Mr. Saylor stated that he had a copy of the signed LDR notice that was sent with the manifest shipment. He emailed me the signed LDR notice on 11/19/2010 (see attachment 5a.i).

At the time of the inspection, I observed two drums labeled as non-hazardous waste onsite. They were a drum of sediment from water that was removed from the non-hazardous A/B Lagoon area and a drum of Geoprobe soil cuttings from the non-hazardous sanitary lagoon. I asked for the analytical results relating to these two waste streams. The data could not be located at the time of the inspection. Mr. Saylor emailed me this data on 11/23/2010 verifying that these wastes were non-hazardous. The data is included as attachment 3, pages 5 through 10.

• Air Stripper Residue is generated from the WWTS air stripper unit. It consists of hardened residue (lime stone) that clogs the holes in the stripper trays. The trays were cleaned twice (exactly when was unknown) since 2008. Mr. Michael stated that the hardened residue was physically removed and that no chemicals were used. He stated that about 5 to 10 gallons of residue were generated from each cleaning. The air stripper residue would appear to be a F002/F003/F005 hazardous waste sludge. The residue was returned to the OAP Treatment Area (see attachment 4 for layout). I discussed this disposal with Mr. Kifer and he stated that it was acceptable. He stated that they have let them consolidate some of the wastes on-site in the past. It should be noted that now the

OAP Treatment Area is capped by the ERH system. Therefore, any air stripper residue generated in the future will have to be handled differently.

- Surge Tank Residue builds up in the cone shaped bottom surge tank. Mr. Michael believed that the tank was cleaned once since 2008. He stated that he did not know the amount of residue that was generated, but would guess that it was less than 100 gallons. The surge tank residue would appear to be a F002/F003/F005 hazardous waste sludge. Mr. Michael stated that the tank residue was returned to the OAP Treatment Area (see attachment 4 for layout). I discussed this disposal with Mr. Kifer and he stated that it was acceptable the same as the air stripper residue above. Mr. Michael estimated that currently the surge tank contains about two feet of residue. It should be noted that now the OAP Treatment Area is capped by the ERH system. Therefore, any surge tank residue generated in the future will have to be handled differently.
- Personal Protective Equipment (PPE) is used on-site. Nitrile gloves are worn during sampling activities. Approximately one to two 2-lb boxes of spent gloves are generated a quarter. Any gloves contaminated with listed waste would also appear to be listed due to the contained-in policy. These gloves were determined to be non-hazardous by Northrop-Springfield based on knowledge and were disposed in the general trash. I discussed this determination with Mr. Kifer and he stated that Northrop-Grumman received approval for a contained-out determination (see attachment 6). According to the contained-out determination approval document, the contained-out determinations for listed hazardous wastes proposed therein was intended to apply to the soil and solid environmental media generated by current and future site activities within the NAP, OAP, and Building Footprint Subfloor area of concerns (see attachment 6, page 5).
- General Trash consists of paper, refuse, cardboard, etc. It is collected in an
 approximately 2-cubic yard dumpster. Allied Waste, Springfield, MO is contacted as
 needed to collect the waste which is about once a month.

Mr. Michael and Mr. Densmore stated that no waste is generated from the EVO treatment process. Also, there have been no universal waste lamps or batteries generated on-site since the facility closed.

Northrop-Springfield last notified on 5/4/2009 as a large quantity generator (LQG) of F002, F003 and F005 hazardous wastes according to the EPA RCRAInfo database (see attachment 7). I reviewed the RCRAInfo Handler Sheet for any incorrect data and none were noted as shown on attachment 7. Based on the latest manifests provided for review and known hazardous wastes generation dates, it appears that Northrop-Springfield last manifested hazardous waste off-site in September 2009 (see attachments 5a through 5e). They manifested 7 tons of F002 hazardous waste and would have been a LQG at that time. Since September 2009 it appears that they did not generate any hazardous waste other than a small amount of air stripper residue and the estimated 100 gallons of surge tank residue. However, exactly when the air stripper residue and surge tank residue were generated was unknown. Therefore, at the time of the inspection, I inspected Northrop-Grumman as a CESQG. However, they will probably be a SQG or LQG again at various times when the surge tank is cleaned, the ERH system is operating

and/or other remedial activities are conducted on-site. The Entry / Exit checklist completed during the inspection is included as attachment 8.

Attachments

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 - e. 12/10/2008 Manifest and LDR Notice F002/F003/F005 spent activated carbon-1st batch when pilot was operating (3 pages)
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MEMORANDUM

SUBJECT: RCRA Compliance Evaluation Inspection at

Northrop Grumman Guidance and Electronics Company, Inc., Springfield, MO

MOD007152903

FROM: Dedriel Newsome, Environmental Engineer

ENSV/EFCB

THRU: John Houlihan, Chief

ENSV/EFCB

TO: Donald Toensing, Chief

AWMD/ RESP

At the request of Air & Waste Management Division (AWMD), I performed a Resource Conservation and Recovery Act (RCRA) compliance evaluation inspection (CEI) at the Northrop Grumman Guidance and Electronics Company, Inc. in Springfield, MO (Northrop-Springfield). Northrop-Springfield is located at 4811 W. Kearney St, Springfield, MO 65803. The mailing address is P.O. Box 1693, Mail Stop 1401, Baltimore, MD 21203. I conducted the inspection on 11/18/2010 under the authority of RCRA Section 3007(a), as amended. During the inspection, I collected the information and data necessary to determine compliance with the applicable regulatory and statutory requirements. This memo and attachments present the results of the inspection. I conducted the inspection as a Level B Multi-Media Inspection and the Multi-Media Screening Checklist is included as attachment 1. Based on the information obtained during the course of the inspection, I inspected the facility as a conditionally exempt small quantity generator (CESQG) of hazardous waste. According to the EPA RCRAInfo database, this facility was last inspected by the EPA on 12/6/2005. Five violations were observed for management of satellite accumulation containers, job descriptions and incomplete manifests during the 2005 CEI.

Inspection Procedures

On the afternoon of 11/15/2010, I conducted a drive-by evaluation of Northrop-Springfield. There were no buildings visible on-site. Therefore, on 11/16/2010, I contacted Mr. Saylor, the facility contact listed in the EPA RCRAInfo database. I informed him that I wanted to conduct a CEI at the Northrop-Springfield facility. Mr. Saylor stated that he was located in

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Baltimore, MD and that they had no company personnel located in Springfield, MO. Mr. Saylor and I made arrangements for me to meet with their contractor, Stantec Consulting (Stantec), Springfield, IL, at the trailer office located on-site on 11/18/2010 at 9:30A.M.

On 11/18/2010, I arrived at the site approximately 9:30A.M. and met two Stantec employees. They were Mark Densmore, Sr. Geologist, and Greg Michael, Sr. Engineer. They acted as the Northrop-Springfield facility representatives while I was on-site. However, they did not sign any of the inspection forms. Therefore, I emailed them to Mr. Saylor on 11/22/2010 for his signature. Mr. Saylor returned them on 11/23/2010 along with additional analytical information (see attachments 2 and 3). I also discussed my inspection findings with Mr. Saylor on the telephone at this time. Mr. Saylor requested that all EPA correspondence be sent to him at the above mailing address.

Facility Description

Northrop-Springfield is no longer operating. In approximately 2007, they sold what they could and demolished the building. Currently, Stantec is conducting on-site investigative and remediation activities. The investigative and remediation activities are being overseen by the Missouri Department of Natural Resources (MDNR), Division of Geology and Land Survey, Superfund Section. The MDNR contact is Evan Kifer located in Jefferson City, MO. Mr. Kifer stated that Northrop-Springfield is currently operating under a 1993 consent decree with MDNR that is in the process of being updated and expected to be finalized by December 2010. The contaminants are primarily tetrachloroethylene (TCE), 1,1,1-trichloroethane (TCA) and other "daughter" constituents. The areas of concern are shown on the layout included as attachment 4. Remediation activities currently include soil and groundwater treatment.

Soil remediation consists of Electrical Resistance Heating (ERH). A full-scale ERH system pilot was conducted on the New Acid Pit (NAP) area and was completed in approximately 2009. Based on the pilot results, an ERH system is currently being installed on the Original Acid Pit (OAP) Treatment Area (see attachment 3 for layout). The ERH system is expected to be operational by approximately January 2011 and the treatment is expected to take about six months. In general, the ERH system heats the soil to remove the contaminants. This generates steam and vapors which are captured. The steam is condensed and the water is discharged to an on-site wastewater treatment system (WWTS). The vapors from the high contaminated areas are treated in a catalytic oxidizer. The vapors from the low contaminated areas are treated in an activated carbon unit. The high and low contaminated areas are predetermined based on previous analytical sampling results.

Until about June 2010, contaminated groundwater was being extracted and treated in the on-site WWTS. The WWTS consisted of pumping the groundwater into a surge tank, treating it in an air stripper, and discharging it to the city sewer under a pretreatment agreement with the city. Northrop-Springfield has about 14 groundwater recovery wells on-site. Since June 2010, Emulsified Vegetable Oil (EVO) is being used to treat the contaminated groundwater. This treatment process consists of injecting a vegetable oil/bacteria culture mix into the groundwater for degradation of contaminants.

The manifest for the last shipment of hazardous waste manifested off-site when Northrop-Springfield ceased operating in 2007 is included as attachment 5f. Since that time, the wastes generated on-site consisted of the following:

- **Spent Activated Carbon** was generated twice from the ERH pilot study. It was generated on 3/25/2009 and 9/29/2008. It was collected in containers and manifested offsite on 4/9/2009 and 12/10/2008, respectively. It was manifested as a F002/F003/F005 hazardous waste to Clean Harbors (see attachments 5d and 5e for manifests).
- Soil Cuttings, Sampling Cores and Sediment are occasionally generated on-site. When they are generated from a contaminated area that is not RCRA hazardous, then they are handled as non-hazardous waste. When they are generated from a contaminated area that is RCRA hazardous, then they are handled as hazardous waste. On 8/17/2009, 7 tons of hazardous soil cuttings were generated on-site. They were manifested off-site on 9/28/2009 to Clean Harbors as a F002/F003/F005 hazardous waste (see attachment 5a for manifest). On 3/25/2009, 4950 pounds of hazardous sampling cores from the NAP pilot ERH system were generated. They were manifested off-site on 4/9/2009 to Clean Harbors as a F002/F003/F005 hazardous waste (see attachment 5c for manifest). On 9/28/2009, 9 tons of non-hazardous soil cuttings were manifested off-site to Clean Harbors (see attachment 5b for manifest).

A signed LDR notice for the 7 tons of F002 soil cuttings manifested off-site on 9/29/2009 could not be located at the time of the inspection. Mr. Saylor stated that they maintain a copy of the manifests on-site and he also maintains an official file in Baltimore, MD. Mr. Saylor stated that he had a copy of the signed LDR notice that was sent with the manifest shipment. He emailed me the signed LDR notice on 11/19/2010 (see attachment 5a.i).

At the time of the inspection, I observed two drums labeled as non-hazardous waste onsite. They were a drum of sediment from water that was removed from the nonhazardous A/B Lagoon area and a drum of Geoprobe soil cuttings from the nonhazardous sanitary lagoon. I asked for the analytical results relating to these two waste streams. The data could not be located at the time of the inspection. Mr. Saylor emailed me this data on 11/23/2010 verifying that these wastes were non-hazardous. The data is included as attachment 3, pages 5 through 10.

• Air Stripper Residue is generated from the WWTS air stripper unit. It consists of hardened residue (lime stone) that clogs the holes in the stripper trays. The trays were cleaned twice (exactly when was unknown) since 2008. Mr. Michael stated that the hardened residue was physically removed and that no chemicals were used. He stated that about 5 to 10 gallons of residue were generated from each cleaning. The air stripper residue would appear to be a F002/F003/F005 hazardous waste sludge. The residue was returned to the OAP Treatment Area (see attachment 4 for layout). I discussed this disposal with Mr. Kifer and he stated that it was acceptable. He stated that they have let them consolidate some of the wastes on-site in the past. It should be noted that now the

OAP Treatment Area is capped by the ERH system. Therefore, any air stripper residue generated in the future will have to be handled differently.

- Surge Tank Residue builds up in the cone shaped bottom surge tank. Mr. Michael believed that the tank was cleaned once since 2008. He stated that he did not know the amount of residue that was generated, but would guess that it was less than 100 gallons. The surge tank residue would appear to be a F002/F003/F005 hazardous waste sludge. Mr. Michael stated that the tank residue was returned to the OAP Treatment Area (see attachment 4 for layout). I discussed this disposal with Mr. Kifer and he stated that it was acceptable the same as the air stripper residue above. Mr. Michael estimated that currently the surge tank contains about two feet of residue. It should be noted that now the OAP Treatment Area is capped by the ERH system. Therefore, any surge tank residue generated in the future will have to be handled differently.
- Personal Protective Equipment (PPE) is used on-site. Nitrile gloves are worn during sampling activities. Approximately one to two 2-lb boxes of spent gloves are generated a quarter. Any gloves contaminated with listed waste would also appear to be listed due to the contained-in policy. These gloves were determined to be non-hazardous by Northrop-Springfield based on knowledge and were disposed in the general trash. I discussed this determination with Mr. Kifer and he stated that Northrop-Grumman received approval for a contained-out determination (see attachment 6). According to the contained-out determination approval document, the contained-out determinations for listed hazardous wastes proposed therein was intended to apply to the soil and solid environmental media generated by current and future site activities within the NAP, OAP, and Building Footprint Subfloor area of concerns (see attachment 6, page 5).
- General Trash consists of paper, refuse, cardboard, etc. It is collected in an approximately 2-cubic yard dumpster. Allied Waste, Springfield, MO is contacted as needed to collect the waste which is about once a month.

Mr. Michael and Mr. Densmore stated that no waste is generated from the EVO treatment process. Also, there have been no universal waste lamps or batteries generated on-site since the facility closed.

Northrop-Springfield last notified on 5/4/2009 as a large quantity generator (LQG) of F002, F003 and F005 hazardous wastes according to the EPA RCRAInfo database (see attachment 7). I reviewed the RCRAInfo Handler Sheet for any incorrect data and none were noted as shown on attachment 7. Based on the latest manifests provided for review and known hazardous wastes generation dates, it appears that Northrop-Springfield last manifested hazardous waste off-site in September 2009 (see attachments 5a through 5e). They manifested 7 tons of F002 hazardous waste and would have been a LQG at that time. Since September 2009 it appears that they did not generate any hazardous waste other than a small amount of air stripper residue and the estimated 100 gallons of surge tank residue. However, exactly when the air stripper residue and surge tank residue were generated was unknown. Therefore, at the time of the inspection, I inspected Northrop-Grumman as a CESQG. However, they will probably be a SQG or LQG again at various times when the surge tank is cleaned, the ERH system is operating

and/or other remedial activities are conducted on-site. The Entry / Exit checklist completed during the inspection is included as attachment 8.

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12/07/2010 11:14 AM

App Jeffery Robichaud Gregory McCabe

---- Original Message -----

From: Gregory McCabe

Sent: 12/07/2010 10:20 AM CST

To: Jeffery Robichaud Cc: Vonna Arnold

Subject: credit leave/59 minute request

I need to leave around 2:15 today. I plan to use my '59 minutes' of 'other' leave, and the rest in credit leave.